

# MARINE RECORD

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## LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interests of Lake Carriers, and improve the character of the service rendered to the public.

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### DAMAGED CARGO—LIABILITY THEREFOR.

A case of interest to vessel owners, shippers and underwriters was tried recently in the United States Circuit Court at Chicago, the question involved being the liability of the vessel owner for damage to a cargo of wheat. The wheat was shipped by Joseph Leiter on board the barge Geo. E. Hartnell, Jan. 21, 1898, under a bill of lading, which after acknowledging the receipt of the grain in good order and condition and undertaking to deliver it at Buffalo in like good order and condition, "dangers of navigation, fire and collisions only excepted," contained a special clause reciting that the freight rate included holding in Chicago until the opening of navigation and gave the privilege (which was not exercised) of substituting another cargo. On arrival in Buffalo it was found that upwards of 5,000 bushels of the wheat had been damaged by water, which had apparently run in upon it through a break in a drainage pipe which ran down through the boiler deck and thence some fourteen feet under that deck (and in the cargo hold) to the port side of the boat where it connected with a scupper running from the same deck and discharging outboard at a point somewhat below the load water line. It appeared from the evidence that during the winter, while the vessel was laid up, the water from the river had flowed in through this scupper and into the drainage pipe where it had frozen and burst the pipe and that through this break, until discovered, the water had leaked into and damaged the cargo. Several interesting questions of law arose during the trial but the case was finally submitted to the jury on the contention of the defendant, the Northwestern Transportation Company, that it was to be regarded not as a common carrier but only as a warehouseman, and that inasmuch as its barge had been built by a first class firm and had the highest rating in the "Inland Lloyds," it had done all that reasonable care required to furnish a proper vessel. Numerous witnesses were also called to testify that this method of locating drainage pipes was proper and, indeed, the only practicable method and that prudence did not require that such a pipe should be plugged during the winter. On the part of the plaintiff, both of these propositions were contested and it was shown to be a recognized practice, though one often neglected, to plug such pipes so as to prevent just such accidents as the one in question.

The jury found a verdict for the plaintiff for the amount of the damage sustained, some \$4,900.

Messrs. Church, McMurdy & Sherman appeared for plaintiff and Messrs. Harvey D. Goulder, of Cleveland, and C. W. Greenfield of Chicago, for defendant.

### MICHIGAN UNIVERSITY-NAVAL ARCHITECTURE.

The board of regents of the University of Michigan at their meeting held Tuesday, June 19, appointed Herbert C. Sadler, of the University of Glasgow, junior professor of naval architecture at a salary of \$2,000, his appointment to date from October 1, 1900. Professor Sadler is assistant professor of naval architecture in the University of Glasgow and personal assistant of Professor J. W. Biles. He was graduated from Glasgow University in 1893 with the degree of bachelor of science in naval architecture.

The course in marine engineering and naval architecture which is being organized for the University of Michigan will open with the beginning of the college year in September. Professor Mortimer E. Cooley will give the instruction in marine engineering and Professor Sadler the work in naval architecture. Other subjects and instructors will be added as rapidly as circumstances permit.

The course is intended to be a graduate one requiring five years' residence at the University. The studies for the first three and one-half years are the same as those in the regular engineering course. The special work will begin the second semester of the fourth or senior year and continue through the fifth year. At the end of the fourth year the student will receive the degree of bachelor of science in engineering, and at the end of the fifth year the degree of master of science in engineering.

The special course of study, as arranged, includes eighteen hours of class room work in marine engineering and naval architecture and twelve hours (36 hours of actual time) of special drawing, making a total credit of 30 hours in the two subjects. The 30 hours (an hour of credit is one hour a week for half a school year) are additional to the regular requirements in the engineering courses.

The regents recently voted \$10,000 for an addition to the engineering laboratory and for the purchase of needed apparatus. It is hoped that the addition will be completed in time for uses this fall and that the new apparatus will be in place.

### WATER POWER OF SAULT STE. MARIE.

There is under way at Sault Ste. Marie, Mich., on the river connecting Lake Superior with Lake Huron, what is conceded to be the greatest water power system in the world. There is in process of building a canal two miles long, carrying a stream of water 22 feet deep and more than 200 feet wide, big enough for the larger ships, that is to supply force to turbines and dynamos capable of generating 40,000 horsepower. The fall of the river at the outlet of Lake Superior here is 18 feet, all of which is utilized. Already there has been completed and put into use 15,000 horse-power on the Canadian side of the river by the same company.

The combined companies have already spent some \$5,000,000 and have plans for the expenditure of about \$15,000,000 more, which sum has been placed at their disposal. In intimate connection with the plans of the companies are others for the manufacture of iron and steel and the construction of ships at Collingwood, on Georgian Bay, where the Government and the municipality have granted large concessions.

The power-plants now under way on the American side consist of a canal two miles long, now half built, debouching into a wide forebay and passing through a stone powerhouse 1,368 feet long, set crossways of the stream. In this house are to be set 320 wheels and eighty 500 horse-power dynamos.

Nearly all the power to be derived from these plants has been contracted for and will be used for the manufacture of carbide, steel, paper, alkali and other products.

The canal is designed to use about half the regular outflow of water from Lake Superior.

### TOLEDO'S CHANCES FOR GREATNESS.

Rockefeller's move in tying up his fleet to boost carrying charges has brought the usual crop of stories following big innovations. Toledo now has a hearing, and it sees great things ahead as a result of Rockefeller's action. Here is how a well-known vesselman of that city figures it out:

"Rockefeller never goes into anything unless it be to win, and my feeling is—and the feeling among a great many men is the same—that Rockefeller, in order to win will be compelled to put up, at some point on Lake Erie, the largest plant that ever has been put up. This will take him about two years, and he would then say to Mr. Carnegie: 'Fly your kite.' He would own the mines, he would run the railroads, he would own the docks, and he would own a sufficient number of boats to carry all the freight for his, the largest plant in the world, and he would dominate the metal for the world.

"This looks as though it is going to be a battle of the giants and a fight to the finish. Now, lucky is the man who jumps in and takes advantage of circumstances. If Toledo will only use what influence and power she has on the lakes for such a plant, should it be erected, and spend money enough to pay somebody to follow the matter up until it is finally settled, it would be a larger manufacturing interest than all the combined present manufacturing interests in Toledo. Toledo would jump from 150,000 inhabitants, her present population, to 250,000. Who will say that this is so or not?"

### TREASURY DECISIONS.

#### CANADIAN STEAMERS.

Canadian steamers can not transport excursion parties in the United States without incurring penalties.

TREASURY DEPARTMENT, June 11, 1900.

SIR: This Department is in receipt of your letter dated the 6th instant, inclosing a request from the Zenith Council of the Order of United Commercial Travelers of America to be allowed to use a certain Canadian passenger boat for the purpose of "taking their visitors on short excursions" from your port and back.

In reply to your statement that you see no objection to the granting of the privilege, and that its exercise will not give offense to the two local companies who transport excursion parties from Duluth, the Department has to state that it finds no authority of law for the granting of a special permit for such purpose, contravening the provisions of section 8 of the act of June 19, 1886, and section 2 of the act of February 17, 1898, which impose a penalty for the transportation of passengers on foreign vessels in such cases.

Respectfully, O. L. SPAULDING, Assistant Secretary.  
Collector of Customs, Duluth, Minn.

#### REGISTER BREADTH OF VESSELS.

The register breadth of a vessel is the breadth at the widest part from outside to outside of hull.

TREASURY DEPARTMENT, BUREAU OF NAVIGATION, }  
WASHINGTON, D. C., June 11, 1900. }

SIR: Referring to the steamer William F. Romer, mentioned in your report of December 9 last, as having a breadth of 52.9 feet, this office has to state that the width to be returned as the register breadth, or breadth of the vessel's beam in such cases, under article 74, regulations of 1892, is the breadth of the broadest part on the outside of the vessel, or, in other words, the breadth at the widest point from outside to outside of the hull, without including projections of paddle boxes or guards beyond the hull.

At some ports it is the practice in admeasuring a side-wheel steamer to find both the breadth of the hull outside the planking, as aforesaid, and, also, for notation on the records of the custom-house the extreme breadth outside the center of the paddle box guards.

Action should be taken accordingly in the case of the steamer William F. Romer, and of other similar vessels.  
Respectfully, T. B. SANDERS, Acting Commissioner.  
Collector of Customs, Baltimore, Md.





## DETROIT.

*Special Correspondence to the Marine Record.*

The Donnelly Contracting Co., of Buffalo, has commenced blasting for the 600-foot channel at the Lime Kiln Crossing. The bottom is solid rock and must be broken with dynamite.

A 16-foot channel has been established in the River Rouge within the last six days. United States Engineer Lydecker has had a dredging outfit in the stream and now boats loaded to 16 feet can go up as far as the second railroad bridge.

The steamer Chippewa, 996 gross and 677 net tons, built at and hailing from Toledo, has been given an official number this week by the Bureau of Navigation, Washington, D. C., as also the William Edenborn, 5,085 gross and 4,431 net tons, built at West Bay City, Mich., and hailing from Port Huron, Mich.

Next Saturday, the steamer Simon J. Murphy, now building at Wyandotte, for the Eddy Bros., of Bay City, will be launched from the berth opposite the one on which the Carnegie steamer Harvard was constructed. The second Eddy boat is about a month behind her sister ship, and will not reach water until July.

When the steamer Tashmoo was being designed a number of friends of the White Star Line managers suggested a plan by which boat parties could be given private accommodations for a day's outing. It was partly with this in mind that the handsome private parlors with bay windows overlooking the river and protected from outside intrusion, were constructed. The first of these private parties will be given next Friday by J. L. Lee, of Strong, Lee & Co., who will take fifty guests to Port Huron. Several parlors have been engaged, and luncheon and dinner will be served on board.

Harry C. Barter, who presented his resignation as secretary and treasurer of the International Longshoremen's Union at a meeting of the executive committee in Buffalo last week, will not discuss the charges implicating President Keefe with J. M. Hennessy, T. W. Kennedy and the Lake Carriers' Association in an alleged conspiracy to disrupt the Buffalo Grain Shovelers' Unions Nos. 115 and 118. No action has yet been taken on Barter's resignation and his friends have been endeavoring to persuade him to continue in office at least until the national convention of the association in July. Mr. Barter, however, will insist that the resignation be accepted.

The Shipmasters' Association official directory just distributed, is the most complete directory and manual of marine information ever published on the lakes. The book has about 450 pages and contains the names of both Canadian and American vessels and masters, rules, soundings, distances between points, running time on a certain speed, salary schedules, government rules, names of the members of the association, etc. The president, Capt. Alex. J. McKay of this city has taken a personal interest in the compilation of the book. The worst feature about the little annual is, that the masters expect the owners to pay for the advertising. Generally, owners have enough to pay, and one or two, at least, say that they want to cut out this black-mailing scheme. Shipmasters can print their names without asking owners to pay.

New steamers in the Detroit river awakened a renewed interest in the owners of the Frank E. Kirby and Ashley & Dustin, her managers, decided to find out what kind of stuff the "flyer of the lakes" was really made of. The steamer was accordingly timed down. She passed the foot of Third street at 9:47 and Twelfth street at 9:49½. Grassy Island was passed at 10:12½ and Mammy Judy light at 10:20. Bois Blanc light, which is considered an even 20 miles from the steamer's dock, was passed at 10:45, the 20 miles having been made in 58 minutes. "We are still in the race," said Manager Dustin. "We began 10 years ago to make the pace and we have never taken the whip down from the mast-head. We will keep it there against all of them, no matter what the owners of these fast steamers say, and we are ready for a brush with all of them. If they reach our speed we will open up and cut off a few more miles just for fun."

A CASE on trial before Judge Kohlsaat at Chicago, concerns damage to a cargo of wheat on the big steel barge George E. Hartnell. McCurdy syndicate companies held risks on the grain to the extent of \$140,000, and lake companies to the extent of \$50,000. The question to be decided is whether the owners of the vessel or the underwriters shall pay the loss. In 1898 the barge Hartnell loaded a cargo of Leiter's wheat at Chicago, and when it was unloaded at Buffalo the next spring part of it was found to have been ruined by water. The underwriters refused to pay on the ground that the damage was due to faulty construction of the ship. The amount involved was \$5,000. The United States District Court has decided in favor of the underwriters, but the case will be appealed.

## CHICAGO.

*Special Correspondence to the Marine Record.*

Grain freights are firm this week at 2 cents on corn to Buffalo.

The steamers Saugatuck and Chas. McVea of the Chicago Saugatuck and Douglas Line commenced running last week.

The Barry Line will extend the run of their steamer, City of Grand Rapids, to Racine in addition to Waukegan and Kenosha, as heretofore.

The old side wheel steamer, Chief Justice Waite is being dismantled and her hull is to be converted into a floating dry dock for vessels of small dimensions.

The schooner rigged tow barge, Bryn Mawr, 4,294 gross and 3,853 net tons, built here and hailing from Duluth, Minn., has been granted an official number this week.

The steel steamer, America, of the Chicago and Michigan City Line, commenced running on Saturday last, leaving Chicago for Michigan City at 9:30 a. m. and 7:30 p. m. daily.

The steamer, A. B. Taylor, which had been running to Michigan City, will run down the drainage canal leaving the Chicago and Holland Line dock at State street at 10 a. m. daily.

The vaudeville show on the Graham & Morton steamer City of Chicago is a great attraction and affords much enjoyment to the passengers on the trips to and fro between Chicago and St. Joe.

When the steamer Albert Soper was leaving port Monday night it was discovered that something was wrong with her stern bearing. She was docked Tuesday morning and upon examination it was found that the strap was broken and the stern bearing had fallen off.

The Williams Line side wheel steamer, Darius Cole, is to arrive here, Thursday morning, with an excursion party from South Haven and will be placed on her summer route between Chicago and South Haven on Saturday, leaving here at 2 p. m. She will make daily trips leaving Chicago at 9 a. m. and returning at 10:30 p. m.

The two cent rate on corn here this week is causing some hurrying up. The steamer R. P. Flower arrived light from Milwaukee Monday morning, passing the barge office at Rush street bridge at 9:20 a. m. 95,000 bushels of corn was loaded at the Minnesota elevator in the north branch and the steamer passed out at Rush street bridge at 4:50 p. m. the same day.

The new steamer, J. R. Bradwell, recently built by Burger & Burger, shipbuilders, Manitowoc, has been inspected by the local inspectors at this port, and has been put in service in the excursion business at the lake front. The Bradwell is a handsome, well built boat with dimensions, 85 feet over all, 18 feet beam, 7 feet hold and a carrying capacity of 150 passengers.

The steamer E. P. Wilbur of the Lehigh Valley line when going up the river Saturday night collided with the Graham & Morton Co.'s steamer City of Chicago laying at their dock just below State street bridge, the current struck the stern of the Wilbur causing her to rake the side of the City of Chicago and doing some damage to her cabin. The mishap did not prevent the City of Chicago from making her regular trip to St. Joseph.

Every move of the Rockefeller people is being watched with interest. Edwin S. Mills, who has charge of the lake interests of the Carnegie Steel Company and is located at Cleveland, has been here looking over the field in grain freights and their influence upon the great question of rates on Lake Superior iron ore. He found the market in such condition that if he attempted to break it by placing two of his big ships at a reduction the charters would not carry the market with them. He would be simply donating the drop to the shippers. Mills, therefore, pulled out of the trade and sent his boats to Lake Superior, where they are badly needed to carry ore.

John A. Ubsdell, Jr., has been appointed manager of the Chicago Ship Building Company, to succeed W. I. Babcock, resigned. Mr. Ubsdell has been with the shipyard for many years, with the exception of the Spanish-American war when he went to the front and served as a naval officer. He has virtually grown up in the yard, and his appointment is in the line of civil service promotion. Mr. Babcock will probably go to New York after taking a vacation. He has been general manager of the company since its first boat was built, and has attained an international reputation as a shipbuilder. The consolidation of the Chicago company with the American Ship Building Company led to the change in management.

It should be remembered by marine men at other points that many of the boats coming to Chicago have been trimming their grain cargoes for several years. Alarming reports have been going the rounds of papers in lake cities regarding trouble with the grain trimmers at this port. There is no more trouble here now than a year ago, and 1899 passed without a murmur of discontent. If the present statements of captains ordering crews to trim cargoes against their will, thus cheating the regular grain trimmers out of employment are continued much longer then there will likely be trouble. And the end will see more of the boats' crews trimming. It will take little now to convince the grain trimmers here that they have a grievance. Vesselmen think it is time to let well enough alone, and state only the facts in connection with the situation.

For the past twelve years the firms of Robert W. Hunt & Co., and Hallsted & MacNaugher, and the latter's predecessors, G. W. G. Ferris & Co., have been associated as consulting engineers, inspectors of rails, structural and bridge materials, locomotives, cars, machinery, etc., each conducting its own business under its own firm names. That the interest of their clients may be even better served the two firms have decided to unite, the new organization to be known as Robert W. Hunt & Co. The partners are Robert W. Hunt, John J. Cone, A. W. Fiero, James C. Hallsted and D. W. MacNaugher. The firm's offices will remain at No. 1121 The Rookery, Chicago; Monongahela Bank Building, Pittsburg, Pa., and No. 71 Broadway, New York.

The steamer City of Chicago will now offer a vaudeville entertainment to the passengers. A stage has been erected on the main deck for this purpose, and has been built by tearing away the ladies' cabin, the steward and purser offices. This marks an innovation on the boats out of Chicago, heretofore the only form of entertainment given the passengers being confined to an imitation band of some four or five pieces. Other boats will be equipped after the Chicago's plan. All the passenger lines are busily engaged in fitting the last of the craft to go into the service for the season. Two more weeks will find the boats at work, and there will not be an idle excursion vessel at Lake Michigan. At Manitowoc the whaleback Christopher Columbus is receiving the finishing touches for the Milwaukee run, while the side-wheeler Darius Cole will be ready in a few days for the day run to South Haven. The Cole is being fitted out at South Haven. Several thousand dollars have been spent on her interior furnishings, and part of the main deck has been re-laid. This will be the first year for the Cole to run in the Chicago passenger trade, having been purchased last fall by the H. W. Williams line from parties in Detroit.

Important additions to the steamer Christopher Columbus of the Goodrich Line since the closing of navigation last year make her not only the largest excursion steamer in the world, but the most conveniently arranged. A promenade deck with an open space of 7,204 square feet and seating space for 2,673 people has been made possible by the addition of an upper or lifeboat deck, which removes all of the necessary life-saving paraphernalia and appliances out of the way of the passengers and puts them where they are accessible only to the officers and crew, acting under the same strict discipline as is maintained on ocean steamers. In addition to giving the passengers more room and comfort, the appearance of the vessel has been greatly improved by the additions. Perfect comfort with every opportunity for all to enjoy every feature of a lake trip is the object sought in the work which the company's designers, draughtsmen and mechanical department accomplished during the last winter. The Steamship Christopher Columbus is unique in that she is the only passenger ship of her kind ever constructed. She was built expressly for World's Fair service, and is regarded as the safest and speediest excursion boat afloat. Her hull is of steel, 262 feet long, 42 feet beam and 24 feet in depth. Her speed, without forcing, is twenty-one miles per hour. Six steel Scotch boilers, 11 by 12 feet, furnish the triple expansion engines with their power. The Columbus makes her first trip to Milwaukee this year, June 23, when the summer excursion business formally opens.

## DULUTH-SUPERIOR.

*Special Correspondence to The Marine Record.*

The steamer Charles R. Van Hise was successfully launched at West Superior, Saturday.

Writing today I would say that the wheat market is so unsettled that it leaves the grain business for shipment in the air. Nothing is doing, and therefore the rate is nominally 2½ cents. Our brokers are asking 3 cents, presumably, according to instructions from Cleveland and Buffalo.

The whalebacks are being disposed of for a long stay apparently. The barges are lined up in a row in the bay, and the steamers have been placed in a slip near the Missabe dock with their fires out. Most of their crews, the number being nearly one hundred men, will leave this week for the lower lakes.

The steamer Philip Minch, while passing through the ship canal Monday evening, took a sheer and collided with some of the piling of the protective piers. Two of the piles were broken. The steamer narrowly missed striking the last crib that was sunk on the south side of the canal. The current is said to have been responsible for the steamer's sheer.

The schooner Troy, in tow of the steamer H. J. Kendall, collided with and sunk a dredge scow in the ship canal at Houghton on Wednesday. The schooner was not badly injured. The sunken scow lies on the east side of the channel and leaves a clear space sixty feet wide. Big boats must use care in passing the spot. The Kendall and tow were lumber laden, and the Troy sheered in passing the scow. The responsibility apparently rests with the boat, but the accident might easily have happened at any time. There are three big dredges with tugs and attendant scows in the ship canal, and these, with the passing of scow loads of stone, make the passage of the waterway rather hazardous. The sunken scow was attached to Hingston & Wood's dredge No. 10.

THE work of constructing the extension to the government piers at St. Joseph, Mich., will begin at once. Eight cribs measuring 100 feet in length and 24 feet wide, will be built and sunk. Lydon & Drews, the contractors, will push the work.



## BUFFALO.

*Special Correspondence to The Marine Record.*

The schooner Thomas L. Howland, which was sunk by the ice off Windmill Point early in the season, was raised on Tuesday. The McMoran Wrecking Co. of Port Huron, which is wrecking the boat, got the pontoons attached on Monday and raising of the vessel was begun. After the coal cargo is unloaded she will be docked for repairs.

Notice is given that a red and black horizontal striped spar buoy has been established on a shoal about three and an eighth miles S. W. from Skilligalee light-house, northeast end of Lake Michigan, with but fourteen feet of water over it. Foul ground extends to the northward and eastward of the buoy, and vessels should give it a berth of at least one-half mile.

It will take sixty new bottom plates and several frames to make the steamer Owego as good as she was before her sojourn on Manitou Island. She is now in the Union dry dock. It would keep lots of people guessing why such an old lake pilot as Capt. John Byrne should go and poke his fine steamer ashore. Possibly the Union Steamship Co., will ask the same question.

A well-posted vesselman said to me yesterday that the underwriters on the foundered schooner Howland acted like babies in trying to recover her coal cargo before she had been listed as a total loss. Her owner and master was in charge of the property, and no one had a right to put a finger on it without his or their permission, unless it could be proved that he was not doing the best for all concerned. Mr. Geo. L. McCurdy, of Chicago, would not so presume for the simple reason that he knows his business.

Charles de Kraft, nautical expert in the Buffalo branch of the hydrographic office, U. S. N., will open a nautical school next winter. He has just returned from Chicago after consulting Commander W. J. Wilson, principal of the Chicago nautical school, as to the practicability of the plan. Mr. Kraft found that the scheme would appeal to marine men, and he decided to go into the venture on the recommendation of Commander Wilson. The Buffalo school will be run after the plan governing the nautical institution in Chicago. Classes will be formed for masters, mates, sailors and yachtmen.

At a meeting of the shipping bureau held this week the following card of freight rates by vessels was adopted: After a careful survey of the situation and the existing relation between the amount of tonnage and cargoes offered they agreed to maintain the figures until June 25. From Duluth, Superior, Washburn, Red Cliff, Two Harbors and Port Wing, \$2.25; from Baraga, Huron Bay, Marquette and Munising, \$2.50; from Grand Marais, \$1.75; from Whitefish Bay, Bay Mills, Emerson, Soo River (above the locks); \$1.62½; from Green Bay, Menominee, Ford River and common points, \$1.62½; from Straits of Mackinac, Cheboygan and Lake Huron points, \$1.62½; from Georgian Bay ports, \$1.40.

## CLEVELAND.

*Special Correspondence to The Marine Record.*

Capt. Howard Shaw, manager of the Eddy-Shaw fleet of steel steamers was in the city this week.

The steamer W. P. Palmer is about completed. She will start out early next week.

The steamer R. A. Packer arrived here on Wednesday from Chicago with a cargo of grain.

The schooner L. A. Law has been chartered from here to Buffalo to load railroad iron from the head of Lake Superior.

General Passenger Agent W. F. Herman, of the C. & B. Line, is sending out a beautiful picture of the steamer City of Erie.

L. M. Bowers, formerly the general manager of the Bessemer Steamship Co., is in the city. He has been at his home in New York State for his health.

The schooner H. Fitzhugh has been tied up by the United States authorities, the Upson-Walton Co. having commenced libel proceedings against the vessel for \$94.03.

A. A. Shantz, of the D. & C. Line, has just issued two rather unique cards. They announce the opening of the Mackinac division of the line and also of the boat between here and Toledo.

Shippers have been unable to get any tonnage to speak of during the last few days, and the demand is not great enough to force them to bid rates up. They still hold at \$1 from the head of the lakes, 90 cents from Marquette and 70 cents from Escanaba. Six of the largest barges of the Bessemer fleet are in ordinary here, and they will not go out again until Rockefeller secures the rate he wants. The supply of coal tonnage is about equal to the demand, and rates are also the same as a week ago.

The first passenger boat of the Northern Steamship Co., the North Land, came into this port on Wednesday. She took out of here the largest number of passengers that ever accompanied her on her initial trip. The officers expected about fifty from here, but instead there were almost twice that many. Among others on board was President W. C. Farrington, who says that this promises to be the heaviest season that the company has ever seen. They have bookings ahead until late in August, and many of their parlors have been taken up to well on in the season. These handsome and exclusively passenger steamers can not but do well this year.

Capt. Joe Sweeney, manager of the Independent Tug Line, has only one tug to fight the big fleet owned by the Great Lakes Towing Co. The Delta, which was operated with the Owen, has been put in the fish trade. Capt. Sweeney is now sailing the Owen.

Informal contracts have been awarded by Col. Jared A. Smith for dredging away the bars at Fairport, Conneaut and Ashtabula. These bars have formed across the mouth of the river and threaten to keep some of the larger boats out of those ports when the low water time comes. The work will be started as soon as the information comes that the money available for it, through the recent appropriation, is in the hands of the committee having jurisdiction over that work. The contracts were given as follows: E. J. Hings-ton, of Buffalo, work at Conneaut; the L. P. and J. A. Smith Company, work at Ashtabula, and the Buffalo Dredging Company, work at Fairport. The work is small and was given to the bidders who had dredges on the ground.

## FLOTSAM, JETSAM AND LAGAN.

The body of fireman Sibley, drowned from the tug Knapp at Toledo, has been recovered and will be shipped to Port Huron.

The contractors are now getting ready to put in two more of the huge unloading machines at the port of Conneaut. This is the automatic unloader that proved quite a success early in the season.

Capt. William Schroeder, keeper of the Green Island light, has been ordered to Milwaukee to take charge of that light. He will be succeeded by Capt. James Wachter, now on the Squaw Island station.

The new clam-shell hoists are being installed in the Philadelphia & Reading dock at South Chicago. They will have a capacity of 1,000 tons daily, and will make the dock able to unload from boats 2,500 tons in a working day.

J. Welsh, a deckhand on the steamer Pioneer, fell over board at Buffalo Saturday and was drowned. He was boarding the boat, and instead of using the ladder, tried to clamber over the rail and fell between the boat and the dock. He was 45 years old and shipped at Ashtabula.

Capt. John C. Sterling, a well known vessel master, died at his home in Marine City, at the age of forty-two years. Capt. Sterling had been ill for two years. He was a prominent Mason, Odd Fellow, Knight of Pythias, Maccabee and For-ester, and also a member of the Shipmasters' Association.

The officials of the Elgin, Joliet & Eastern Railroad have in contemplation the building of a large grain elevator in Waukegan. The coal receipts now foot up 27,000 tons, and with this amount of tonnage available for grain shipping, it is believed that a good business could be attracted to the elevator.

The steamer Alfred Mitchell was launched from the Langell yard at St. Clair Sunday afternoon. She is named after her owner, the well-known Cleveland vesselman, and was christened by his daughter, Miss Sarah. The dimensions of the new steamer are: Keel, 270 feet; beam, 40 feet; molded depth, 25½ feet.

Agents of the steamship lines between gulf ports and Liverpool are canvassing Kansas, Oklahoma and Nebraska for wheat and flour cargoes. Railroads having eastern connections at Chicago stand to lose considerable business. In these three states there are now 20,000,000 bushels of wheat, and the harvest will be 170,000,000 bushels this year.

The schooner J. F. Card is in drydock at Manitowoc for the repair of collision damage. While coming up Lake Huron with coal for Manistee she was run into by the steamer Hiawatha, Capt. R. J. Walder, during a fog, and had her stem, bowsprit and jibboom carried away. The disabled schooner was towed to Manistee for the discharge of her cargo and then taken to Manitowoc.

F. M. Symonds, Inspector of the ninth light-house district has given notice that applications will be received for thirty days at his office in Chicago for vacancies for assistant keepers of light-houses which may occur in the ninth light-house district for one year from date of examination. The ninth light-house district includes Lake Michigan, Green Bay and tributary waters lying west of a line drawn across the Straits of Mackinac at Mackinac point.

The following has been going the rounds of the press. "A new ruling from headquarters at Washington, relative to tugs has gone into force. Towing tugs that are on duty for twelve hours must have one pilot, one engineer and one deckhand; and when on duty for twenty hours must have two pilots, two engineers and two deckhands. It is presumed that this rule does not apply to tugs that work around the harbors." On inquiry it is found that no new order has been promulgated, nor is it known how the foregoing item could have originated.

Passenger: "Can you tell me, my good man, the name of that fine bird hovering about?"

Old Salt: "That's a halbatross, sir."

Passenger: "It's a rara avis, is it not?"

Old Salt: "Dunno, sir; I've always heard it called a halbatross."

Passenger: "Yes, yes, my good fellow; but I call that a rara avis just as I call you a genus homo."

Old Salt (indignantly): "Oh, then, I calls that a halbatross just the same as I calls you and old hidiot."—Collier's Weekly.

## NOTICE TO MARINERS.

UNITED STATES OF AMERICA—NORTHERN LAKES AND RIVERS—WISCONSIN.

TREASURY DEPARTMENT,  
OFFICE OF THE LIGHT-HOUSE BOARD,  
WASHINGTON, D. C., June 13, 1900.

BUFFALO BREAKWATER (N. END) LIGHT STATION. Notice is hereby given that, on or about June 20, 1900, the sounding of the steam fog whistle at this station, on the crib behind the northerly end of the new breakwater, southerly side of the approach to Buffalo Harbor, easterly end of Lake Erie, will be discontinued until further notice.

During thick or foggy weather the bell will be struck by machinery a triple blow every 30 seconds.

Due notice of the re-establishment of the whistle will be given.

## KENOSHA PIERHEAD RANGE LIGHT STATION.

Notice is hereby given that, owing to the widening of the entrance to Kenosha Harbor, westerly side of Lake Michigan, and the reconstruction of the north pier, on or about June 18, 1900, the fixed red lantern light on the outer end of the pier will be discontinued.

The sixth-order fixed red light, in the tower near the outer end of the pier, forming the rear light of the present range, will remain in its present position, on a detached part of the pier, until the completion of the new north pier, about 70 feet to the northward, when the light and its tower will be established on the extreme outer end of the new pier, about 380 feet to the eastward of their present position.

By order of the Light-House Board:

FRANCIS J. HIGGINSON,  
Rear Admiral, U. S. N., Chairman.

LIGHT-HOUSE ESTABLISHMENT,  
OFFICE OF THE LIGHT-HOUSE INSPECTOR, 10TH DISTRICT,  
BUFFALO, N. Y., June 15, 1900.

Notice is hereby given that the Galloo Island Shoal Gas-Buoy No. 1 on Galloo Island Shoal, Lake Ontario, New York, is out of order and burning dimly. It is liable to go out at any time. It will be repaired as soon as practicable.

By authority of the Light-House Board.

FRANKLIN HANFORD,  
Inspector 10th L. H. District. Commander, U. S. N.

LIGHT-HOUSE ESTABLISHMENT,  
OFFICE OF THE LIGHT-HOUSE INSPECTOR, 11TH DISTRICT,  
DETROIT, MICH., June 15th, 1900.

Big Bay Point Buoy (30 foot black spar) and Pointe Abbaye Shoal (N) Buoy, first class bell, both on the south shore of Lake Superior, Michigan, have been placed in position.

The former on June 11th, 1900, and the latter on June 13th, 1900.

HEAD OF RUSSELL ISLAND. The light keeper reports that the 25 foot spar buoy, red and black horizontal stripes, which marked the dividing point of the North and South channels of the St. Clair river, has been carried away. It will be replaced as soon as possible.

The red and black horizontal stripe spar buoy marking the wreck of the schooner Leader, which was carried away by some unknown craft on the night of the 12th instant, was replaced on the 14th inst.

By order of the Light-House Board.

J. C. WILSON,  
Commander, U. S. Navy, Inspector 11th Light-House Dist.

LIGHT-HOUSE ESTABLISHMENT,  
OFFICE OF THE LIGHT-HOUSE INSPECTOR, 9TH DISTRICT,  
CHICAGO, ILLINOIS, June 18th, 1900.

DAHLIA SHOAL.—Notice is hereby given that a red and black horizontal striped spar buoy has been established on a shoal about 3¾ miles S. S. W. from Skilligalee Light-House N. E. end of Lake Michigan, with but 14 feet of water over it. Foul ground extends to the northward and eastward of the buoy and vessels should give it a berth of at least ½ mile.

By order of the Light-House Board.

F. M. SYMONDS,  
Inspector 9th Light-House District. Commander U. S. N.

DOMINION OF CANADA—ONTARIO.—I. Port Dalhousie main light. The new back range light-house tower at Port Dalhousie, Lake Ontario, entrance to the Welland canal, stands on the lake beach, close to the edge of the east breakwater, 1,500 feet S. ¼ W. from the front light, and in one with it forms a range leading into the canal.

The building, octagonal in plan, is of wood painted white and is surmounted by an iron lantern painted red. It is 58 feet high from its base to the vane on the lantern.

The light is, temporarily only, fixed red, elevated 56 feet above the level of the lake and should be visible 9 miles from all points of approach lakeward.

The present illuminating apparatus consists of one lamp in a dioptric lens of the seventh order, strengthened in the line of range by a lamp with a reflector.

II. Names on Lake St. Louis Lightships.—The names of the three lightships on lake St. Louis, river St. Lawrence above Montreal, have been painted on their top sides, in white letters, as follows: On No. 1, the name "Lachine;" on No. 2, "Lake St. Louis No. 2;" on No. 3, "Chateaugay."



## MARINE HOSPITAL SERVICE ON THE LAKES.

CONTRACTS FOR CARE OF SEAMEN, ETC.

TREASURY DEPARTMENT,  
OFFICE SUPERVISING SURGEON-GENERAL U. S. M. H. S.  
WASHINGTON, D. C., June 6, 1900.

The following contracts for the care of seamen entitled to relief from this service, for the fiscal year ending June 30, 1901, are published for the information of accounting officers of the Treasury Department, etc. This is to be regarded as official notification of the acceptance of the proposals made by the parties designated. Charges will be allowed for the day of admission of a hospital patient, but not for the day of discharge or death. The right is reserved by the Secretary of the Treasury to terminate any contract whenever the interests of the service require it. All relief must be furnished in accordance with the Revised Regulations of the Marine Hospital Service; and, in consequence of the large expenditure for relief and of the limited sources of income, it has become necessary to give notice that, as provided in the regulations, no allowance will be made for expenditures incurred at any port not named.

Upon admission to a contract hospital of a patient with a disease or injury which, in the opinion of the medical officer, the acting assistant surgeon, or physician in charge of the case, will require more than twenty days' treatment in hospital, the officer issuing the permit will at once request authority from the Bureau to transfer such patient to the nearest marine hospital, provided the patient's condition, in the opinion of the medical officer, the acting assistant surgeon, or physician in charge of the case, is such as to admit of transportation.

The attention of customs officers, commissioned medical officers, acting assistant surgeons, or other physicians in charge of patients of the Marine-Hospital Service at contract stations, is hereby called to the necessity of discharging patients promptly upon the termination of the necessary hospital treatment, and without awaiting the expiration of the period authorized in the permit.

Ashland, Wis.—Dodd's Hospital to furnish quarters, subsistence, nursing, medical attendance, and medicines, at \$1 a day; contagious diseases, \$2 a day, and to provide for the burial of deceased patients, at \$15 each.

Ashtabula, Ohio.—The medical attendance to be furnished by an acting assistant surgeon; Mrs. Henry Whelpley to furnish quarters, subsistence, and nursing, at \$1 a day; contagious diseases, \$1.50 a day; Gregory, Burwell & Co., to provide for the burial of deceased patients, at \$16 each.

Buffalo, N. Y.—The medical attendance to be furnished by a medical officer of the Marine Hospital Service; Buffalo Hospital (Sisters of Charity) to furnish quarters, subsistence, nursing and medicines at \$1 a day. The health commissioners of the City of Buffalo to care for contagious diseases at \$2 a day; C. E. McDonald to provide for the burial of deceased patients at \$9 each.

Chicago, Ill.—Hospital patients to be cared for in the United States Marine Hospital; B. E. Arntzen to provide for the burial of deceased patients at \$15.50 each.

Cleveland, O.—Hospital patients to be cared for in the United States Marine Hospital; Hogan, Sharer & Co. to provide for the burial of deceased patients at \$13 each.

Detroit, Mich.—Hospital patients to be cared for in the United States Marine Hospital; Chas. N. Flattery to provide for the burial of deceased patients at \$7 each.

Duluth, Minn.—The medical attendance to be furnished by an acting assistant surgeon; St. Luke's Hospital to furnish quarters, subsistence, nursing and medicines at 80 cents a day; John W. Stewart to provide for the burial of deceased patients at \$16 each.

Erie, Pa.—The medical attendance to be furnished by an acting assistant surgeon; the Hamot Hospital Association to furnish quarters, subsistence, nursing and medicines, at 71 cents a day; the Board of Health of the city of Erie to care for contagious cases, at \$3 a day.

Escanaba, Mich.—The medical attendance to be furnished by an acting assistant surgeon; Delta County hospital to furnish quarters, subsistence and nursing at \$1 a day.

Grand Haven, Mich.—The medical attendance to be furnished by an acting assistant surgeon; Anna Farnham to

furnish quarters, subsistence and nursing at \$1 a day; John J. Boer to provide for the burial of the deceased patients at \$11.75.

Green Bay, Wis.—The medical attendance to be furnished by an acting assistant surgeon; Ellen H. Hume to furnish quarters, subsistence, nursing and medicines at \$1 a day.

Ludington, Mich.—The medical attendance to be furnished by an acting assistant surgeon; Mrs. H. D. Linsley to furnish quarters, subsistence and nursing at 80 cents a day.

Manitowoc, Wis.—The medical attendance to be furnished by an acting assistant surgeon.

Manistee, Mich.—The medical attendance to be furnished by an acting assistant surgeon; Mercy Hospital to furnish quarters, subsistence, nursing and medicines at 90 cents a day; W. P. Switzer to provide for the burial of deceased patients at \$11 each.

Marquette, Mich.—The medical attendance to be furnished by an acting assistant surgeon; St. Mary's Hospital to furnish quarters, subsistence, nursing and medicines at \$1 a day; and to provide for the burial of deceased patients at \$6.45 each.

Menominee, Mich.—The medical attendance to be

John F. Dain & Son to provide for the burial of deceased patients at \$15 each.

Port Huron, Mich.—The medical attendance to be furnished by an acting assistant surgeon; Port Huron Hospital and Home to furnish quarters, subsistence and nursing, at \$1 a day; George Thompson to provide for the burial of deceased seamen, at \$7.45 each.

Saginaw, Mich.—The medical attendance to be furnished by an acting assistant surgeon; St. Mary's Hospital to furnish quarters, subsistence, nursing, and medicines, at 90 cents a day; contagious diseases at \$2 a day.

Sandusky, Ohio.—The medical attendance to be furnished by an acting assistant surgeon.

Sault Ste. Marie, Mich.—The medical attendance to be furnished by an acting assistant surgeon.

Sturgeon Bay, Wis.—The medical attendance to be furnished by an acting assistant surgeon; Maggie Dunlap to furnish quarters, subsistence, and nursing, at \$1 a day.

Superior, Wis.—The medical attendance to be furnished by an acting assistant surgeon; St. Mary's Hospital to furnish quarters, subsistence, nursing, and medicines, including contagious disease, at 90 cents a day.

Toledo, Ohio.—The medical attendance to be furnished by an acting assistant surgeon; The Toledo Hospital Association to furnish quarters, subsistence, nursing, and medicines, at 80 cents a day; contagious diseases, at \$1.50 a day; and to provide for burial of deceased patients, at \$12 each.

## HER NAME WAS THE "YOU GUESS."

It used to be the custom among small boatmen plying the Detroit and St. Clair rivers and the intervening lake to name their vessels in the imperative mode. Thus it came to pass that there was a whole flotilla of scows named You Go, You Stop, You Fly, You Swim, You Sink, You Fish, You Drink and the like. As may be imagined this peculiar style of nomenclature was frequently very puzzling to those unfamiliar with the state of affairs.

Out in the Detroit river one dark night a skipper of a big propeller that was picking its way carefully up stream called out to one of the small vessels that was bothering him by its proximity:

"Ahoy there, What boat is that?"  
"You Tell," was the laconic answer.

"Who are you, I say?" repeated the angry skipper.

"You Tell," was the same answer that came back across the dark waters.

"Confound you, how in thunder can I tell? Where do you hail from?"

"Detroit."

"And what do you call yourself?"

"You Tell, you old fool."

The captain gave it up in anger and despair. Shortly afterward he ran across another river boat.

"Ahoy, there! Who are you?" he sang out.

"You Guess."

"None of your nonsense. Tell me who you are or I'll run you down."

"You Guess, I told you. What ship are you?"

"You go to —," was the angry retort, and the propeller forged ahead into the darkness, with fumes of sulphur and brimstone hovering about her wheelhouse.—Detroit Free Press.

## EASTERN FREIGHTS.

Messrs. Funch, Edye & Co., New York, report the condition of the Eastern freight market as follows:

Fresh business in grain shipments has been handicapped by fluctuations in the price of grain, especially of wheat, brought about by crop scares, and fixtures have been almost exclusively of steamers in settlement of trades previously effected, the demand for smaller grain boats, excepting for Portugal, being very light. Charters for timber from the Gulf and deals from the Provinces have meanwhile again been actively resumed, and freights in both quarters show an advancing tendency, against which, as to deals, the fixture of a time boat reported below is doubtless intended to serve. The demand for steamers for general purposes continues, and a number of orders for coal lattersly placed on our market appear to fail of execution, mainly in consequence of the comparative scarcity of open tonnage.

Our comments of last week on the market for sail tonnage holds good for the present, since but little in the way of chartering has been accomplished, and rates are sustained by the continued scarcity of desirable tonnage.



CHICAGO RIVER SCENE.

(From Beeson's Marine Directory.) Apologies.

The new conditions, caused by the strong current running in Chicago river since the opening of the drainage canal.

furnished by an acting assistant surgeon.

Milwaukee, Wis.—The medical attendance to be furnished by an acting assistant surgeon; St. Mary's hospital to furnish quarters, subsistence, nursing and medicines at \$1 a day. The Commissioner of Health of the city of Milwaukee to care for contagious diseases at \$2 a day. Patients who require hospital treatment and whose condition, in the opinion of the acting assistant surgeon, will permit their transportation with perfect safety, will be sent to the marine hospital at Chicago, Ill.; Ferd Wolter to provide for the burial of deceased patients at \$14 each.

Ogdensburg, N. Y.—The medical attendance to be furnished by an acting assistant surgeon; City Hospital to furnish quarters, subsistence, nursing and medicines at \$1 a day; contagious diseases at \$2 a day.

Oswego, N. Y.—The medical attendance to be furnished by an acting assistant surgeon; Oswego Hospital to furnish quarters, subsistence, nursing and medicines at \$1 a day;



## CONSTRUCTION OF A MERCATOR'S CHART.

POPULARITY AND PECULIARITY OF THE MERCATOR'S CHART—MERCATOR'S ORIGINAL SYSTEM. WRIGHT'S DEMONSTRATION—HOW TO CONSTRUCT AND USE A MERCATOR'S CHART.

ERNEST K. RODEN IN SCIENCE AND INDUSTRY.

A map of the world on Mercator's projection is a very common thing nowadays. It is to be found anywhere; in the luxurious offices of the great financier as well as in the less elaborately decorated office of the junk dealer; on the walls of every college, school and kindergarten; in the homes of rich and poor; everywhere can be found evidence of the great popularity of this chart. In fact, it gives an observer the impression that it is used more for decoration than anything else.

Looking at a Mercator's chart representing the world, without being familiar with the peculiarity of its construction, the beholder is particularly struck with the immense tracts of land abounding above the sixtieth parallel of north latitude. The area of Greenland appears to be about one-third larger than the United States, and the islands of Spitzbergen appear twice as large as the Kingdom of Spain. Undoubtedly, many persons think that such is in reality the case, arguing that charts are not printed "with lies on their face." Now, we are obliged to confess that, whatever the merits of a Mercator's chart, it certainly cannot be said to be truthful—at least not in the higher latitudes. Greenland is not as large as the United States; in fact, the area of Greenland is not any greater than that of Mexico, and the area of the Kingdom of Spain is at least five times as large as that of the islands of Spitzbergen. Why, then, should charts or maps that are erroneous and misleading be printed and distributed for sale? Is it because of the old saying that the public at large, as a general rule, enjoys the privilege of getting fooled? No, it is not; the reason for this apparent irregularity of the Mercator's chart will be explained as we proceed.

Charts, Mercatorial or not, are representations of the earth, or portions of the earth's surface. Now, since the form of the earth is globular, it is evident that any representation of its surface on a flat sheet of paper, such as a chart, must necessarily be an artificial construction—or, in other words, a projection of the globe upon the paper. In order to insure a true representation of the original, there are certain conditions that must be fulfilled, viz., conformity, equivalence, and

map and chart construction, the polyconic, the gnomonic and Mercator's projection are prominent. In simplicity and general handiness the last named is foremost.

The inventor of this system was Gerard Mercator, which is the Latinized form of his real name, Kramer. Mercator was born at Rupelmonde, Flanders, in 1512, and died in 1594. He was educated at Bois-le-Duc, and later took a degree in philosophy at the University of Louvain, after which he made a profound study of the science of geography and mathematics. In 1559 he was appointed a cosmographer to the Duke of Cleve. His system was not strictly a projection, but may be said to have resulted from operations illustrated in Figs. 1, 2, and 3. By stripping the gores formed by the meridians of the globe (Fig. 1) representing the

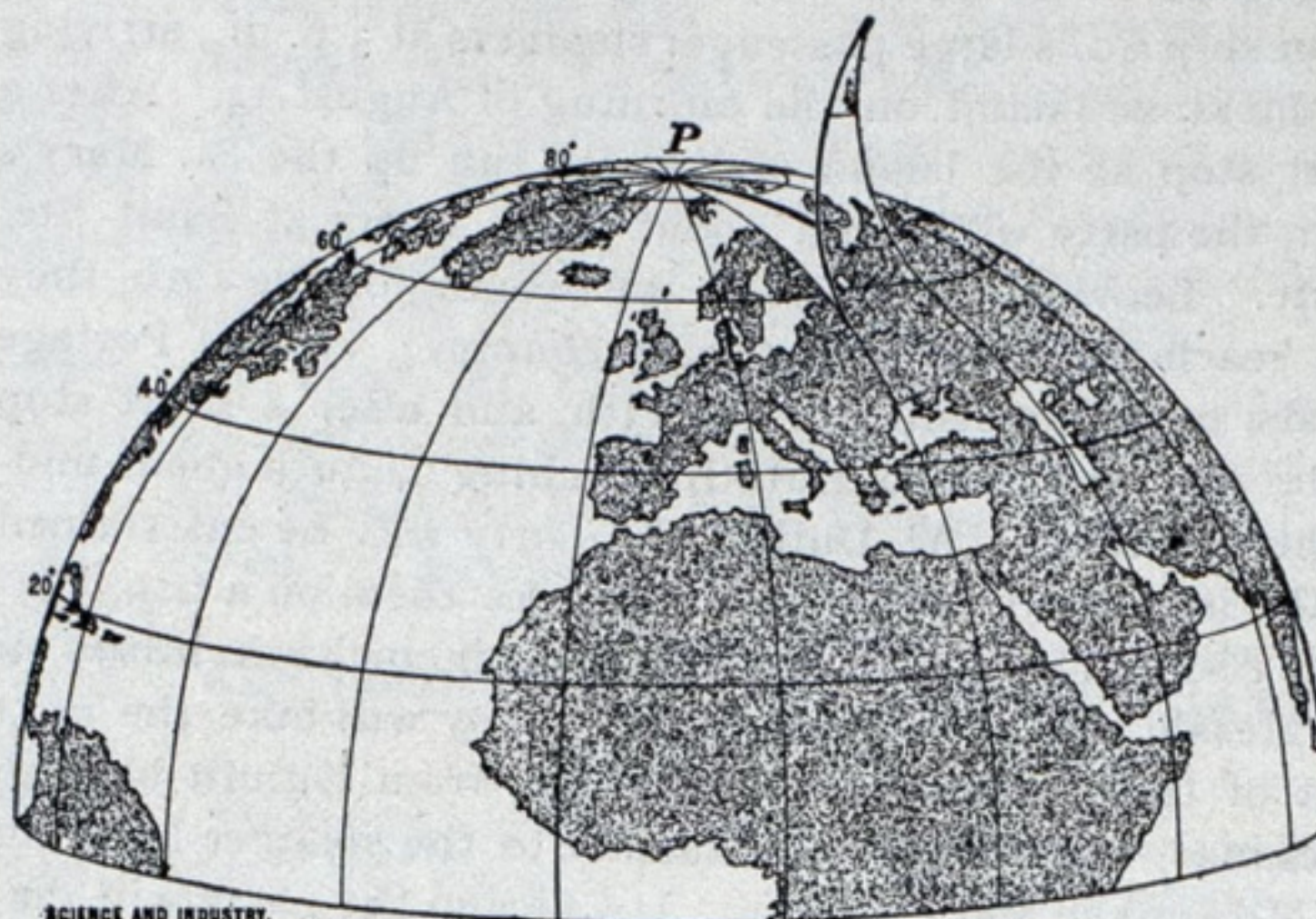


FIG. 1.

northern hemisphere, a chart is formed similar to the one shown in Fig. 2. Owing to the openings, or vacant spaces, between the meridians, this chart is very defective; and, in order to remedy this defect, the upper parts of the gores are stretched so as to form the chart represented in Fig. 3. A glance at this chart, however, will reveal the fact that everything on it, except the equatorial parts, are distorted, and that this distortion increases in the higher latitudes. Now, in order to restore a balance of orientation, or the relative position and direction of spaces, which are distributed horizontally (or in longitude), it is essential to distort the chart in an equal proportion vertically (or in latitude).

(CONCLUDED IN NEXT ISSUE.)

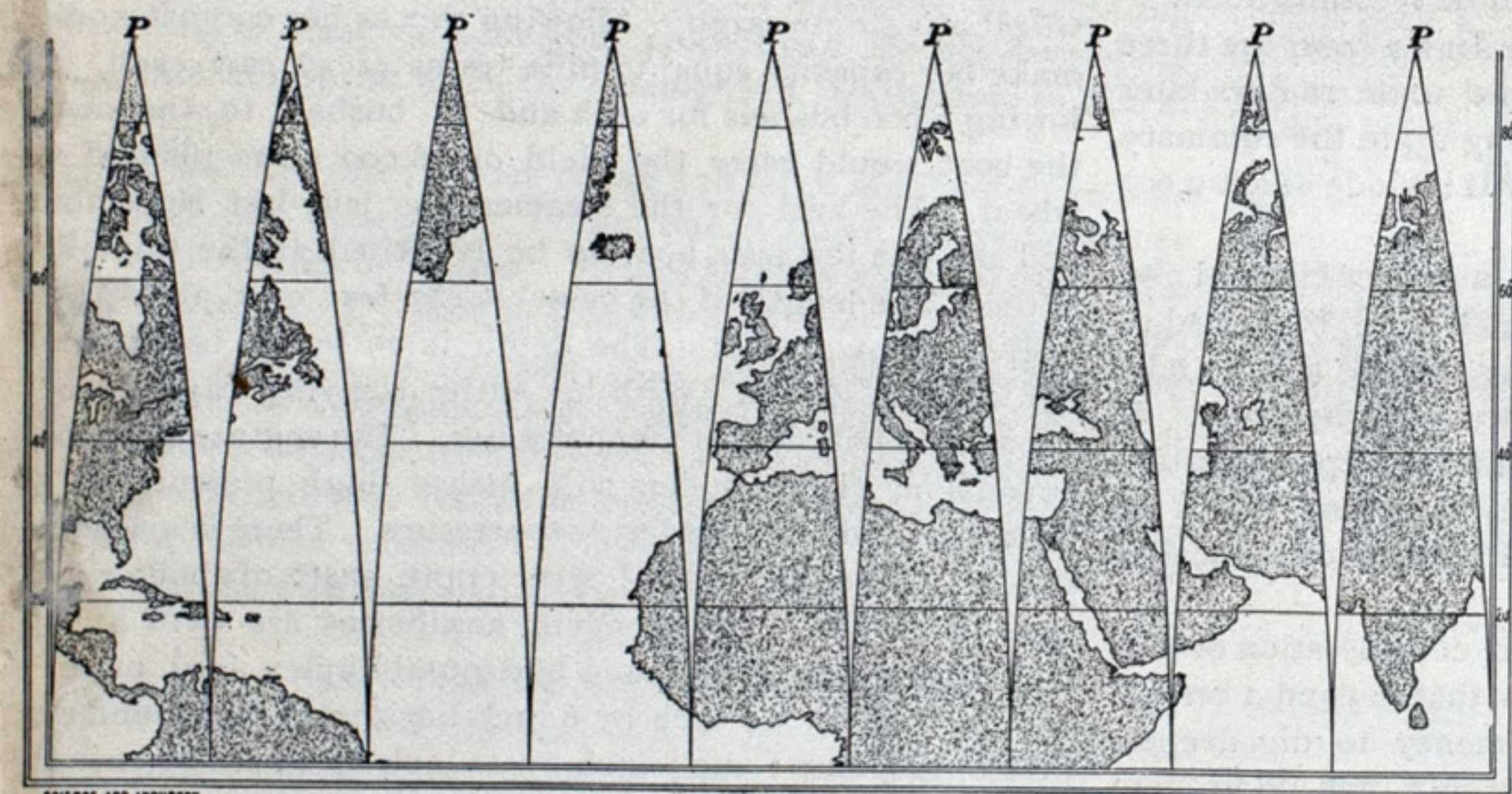


FIG. 2.

equidistance. Conformity requires that each figure of the image shall possess a geometrical similarity to the original; that is, all corresponding angles must be equal. Equivalence requires that the area of certain spaces on the chart shall have the same ratio to one another as the corresponding spaces on the surface of the earth. Equidistance requires that the distance from any two points to the center of the chart shall have the same ratio to each other as the corresponding distances on the earth.

The spherical representation of the earth (the globe) is, however, the only image that can satisfy all of these conditions. But a globe is a very inconvenient thing on which to find distances, bearings, and areas. Therefore, when representing some part of the earth's surface on a plain sheet of paper, the constructor will have to content himself with strictly satisfying one of these conditions, while the others are satisfied as near as they possibly can be. This may be accomplished in several ways by applying the rules of different methods of projection. Among these, used for

## SHIPPING AND MARINE JUDICIAL DECISIONS.

(COLLABORATED SPECIALLY FOR THE MARINE RECORD.)

**Contract of Affreightment with Charterer—Liability of Vessel for Breach.**—Neither a vessel nor her owner is liable for a breach of a contract for the carriage of a cargo, between the charterer and a shipper, occurring before any part of the cargo had been put on board. *The Hiram*, 101 Fed. Rep. (U. S.) 138.

**Liability for Repairs.**—A part owner of a vessel, who purchased his interest from his co-owner, paying therefor a price largely in excess of its then value, upon an agreement that the vessel should be repaired at the cost of the seller, cannot be charged with personal liability for the cost of such repairs, made under a contract with his co-owner as managing owner, because of the fact that he knew that such repairs were being made, and that their cost greatly exceeded the amount estimated, and did not object. *Woodall et al. vs. Dempsey et al.*, 100 Fed. Rep. (U. S.) 653.

**Towage Services Rendered Under Contract.**—Where a tug which had been employed to render general towing services for a partnership for an agreed sum per month was sent by the firm on a special service to bring a general tow, without any agreement as to what should constitute such tow, for which service an agreed price was to be paid, such service must be deemed to have been rendered on the personal credit of the contractors, and not to create a lien on a dredge, which, with two scows and other dredging material, made up the tow, for the whole or any part of the towage. *The Saratoga et al.*, 100 Fed. Rep. (U. S.) 480.

**Seamen—Right to Discharge—Misunderstanding as to Voyage.**—Under the maritime law of Great Britain, it is the duty of the master, in shipping seamen, to see that the contract is clear and explicit, and that the seamen are informed of the precise voyage for which they engage; and where it appears that such duty was not performed, and that seamen shipped in a foreign port without the sanction and attestation of the consular officer, as required by the merchant act, signed under a misapprehension as to the voyage, and with the understanding that it was to terminate at a certain port, they will be there released by a court of admiralty, although it does not appear that there was any intention to practice a fraud upon them. *The Kambira*, 100 Fed. Rep. (U. S.) 118.

**Reasonableness of Expenses.**—A vessel was stranded in an exposed position at 7 p. m., and the captain engaged two tugs, which unsuccessfully pulled upon the ship until midnight; and the next morning he made a contract, dependent upon success, with a tugboat syndicate to get the vessel off for \$3,000. Five tugboats then pulled ineffectually at intervals till midnight. The next morning the captain engaged lighters, and the deck load was taken off, and the same day

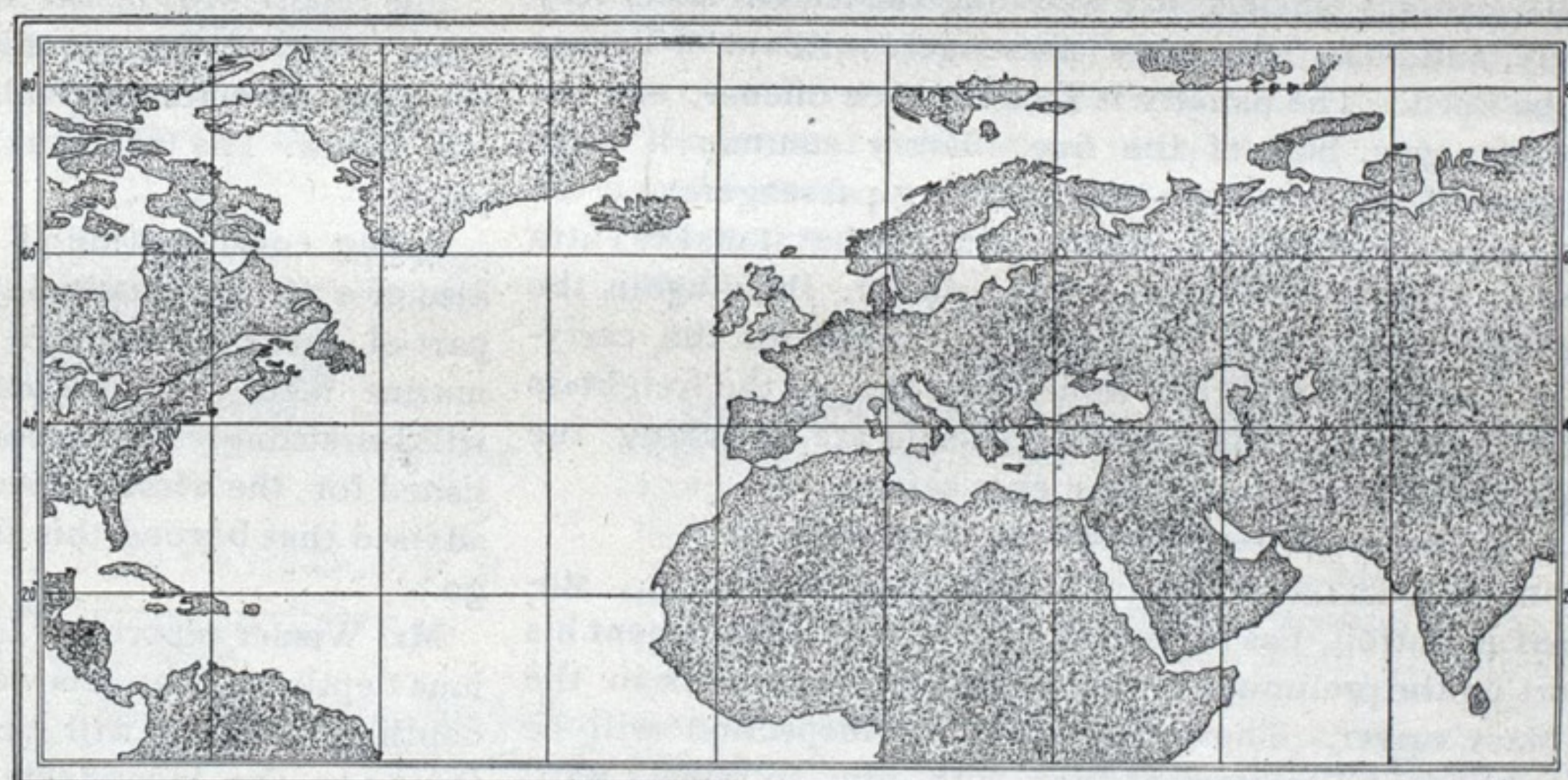


FIG. 3.

## ABSTRACT OF BIDS.

Abstract of droposals for hire of towboat as tender for U. S. dredges on Ohio river during present season, opened at Cincinnati, Ohio, June 18, 1900, by Major Wm. H. Bixby, Corps of Engineers, U. S. A.

BIDDERS.	Price per day
Val. P. Collins, Cincinnati, O., Str. Geo. Moredock..	\$56.24
Enterprise Towboat Co., Catlettsburg, Ky., Str. John C. Fisher.....	\$49.50
Monongahela Consolidated Coal & Coke Co., Pittsburgh, Pa., Str. Charley Hook.....	\$57.00
C. W. Posey, Agt., Homestead, Pa., Str. R. L. Aubrey	\$51.75
J. T. Duffy, Louisville, Ky., Str. Jim T. Duffy, Jr....	\$45.00
Stephen D. Davis, Marietta, O., Str. Catherine Davis	\$53.00

At a meeting of the harbor commissioners at Montreal Tuesday it was announced that the specifications for the elevator of the Connors syndicate had been approved by the department of public works and marine and fisheries, so that the building of the elevator and accessories may be proceeded with at once.

the vessel was pulled from the bar. She was reloaded, and proceeded on her voyage. Held, that the employment of tugs and lighters was necessary, and that the expenses incurred by the captain were not unreasonable, so as to relieve the owner of the cargo from liability, under a general average adjustment, for its proportion of the expenses. *Magdala S. S. Co. vs. H. Baars Co.*, 101 Fed. Rep. (U. S.) 303.

**Maritime Liens—Repairs—Contract with Ostensible Owner.**—A corporation having its place of business in New York, chartered a steamer in service on the lakes with an option to purchase, stipulating to place and keep her in repair. It had the vessel taken to New York, where it delivered her to libellant for such alterations and repairs as would fit her for ocean service, stating that it had purchased her. After she had been placed in dry dock, and such removals made from her hull that she could not be floated without some restoration, and libellant had contracted for the materials for her repair, it was notified by the owner not to make any repairs on the credit of the vessel. Held, that libellant was justified in regarding their charterer as the owner, and that the notice from the owner did not affect its right to a lien, if such right existed, for the work it had previously done, or such as was necessary to be done before the vessel could again be safely floated. *The Roanoke*, 101 Fed. Rep. (U. S.) 298.





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<b>CAPT. JOHN SWAINSON,</b>	-	-	-	<b>Editor.</b>
<b>CLEVELAND,</b>				<b>CHICAGO,</b>
<b>Western Reserve Building.</b>				<b>Royal Insurance Building.</b>

**SUBSCRIPTION.**

One Copy, one year, postage paid,	-	-	\$2.00
One Copy, one year, to foreign countries,	-	-	\$3.00
Invariably in advance.			

**ADVERTISING.**

Rates given on application.

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**THE MARINE RECORD PUBLISHING CO.,**  
 Western Reserve Building, Cleveland, O.

Entered at Cleveland Postoffice as second-class mail matter.

No attention is paid to anonymous communications, but the wishes of contributors as to the use of their names will be scrupulously regarded.

CLEVELAND, O., JUNE 21, 1900.

ATTENTION is called to the advertisement on page 13 on the present issue relative to supplies for the Life-Saving Service for the fiscal year ending June 30, 1901.

As we have often said, neither owners, masters, engineers nor brokers must hold their vessel or vessels for the season. The MARINE RECORD prints the ownership and appointments of officers in the spring, after that, daily changes take place, therefore, a season list can not be accurately made out.

THE customs officials, are watching the freight boats very closely, and boats that carry passengers without a license will be fined. The penalty is \$500 for each offense, and the informer gets half of the fine. Every summer a large number of freighters have been carrying passengers and the crews have made many protests claiming that it makes extra work for them which they are not paid for, then again the passenger boats claim that they pay a license for the carrying of passengers and they would have more if the freighters carried less, hence the customs officials are watching the freight boats more closely than ever before.

COL. G. J. LYDECKER, Corps of Engineers, U. S. A., stationed at Detroit, has submitted to the War Department his report on the preliminary survey for improvements in the St. Mary's river. The documents after inspection will be referred to the Secretary of War, with him to remain until the convening of Congress, when the rivers and harbors committee will make use of it in preparing its bill for the short session. The statements set forth that the object of the improvements from Lake Superior to Lake Huron is to obtain a depth of twenty-one feet and greater width in some places. Deepening of the Hay Lake channel is required, and both deepening and widening at the Neebish, where so much serious trouble was had with the Douglas Houghton last fall. In addition, lengthening of the old lock at the "Soo" is contemplated, which in itself is a mammoth undertaking. Altogether, the improvements, as sized up by Col. Lydecker, will cost upwards of \$9,000,000. Their completion will require several years after their authorization by Congress. Just before Congress adjourned Col. Lydecker submitted his report on estimates for deepening and straightening the channel of the Detroit river. This in itself involved from \$2,000,000 to \$10,000,000. By the river and harbor act of this year provision was made for a preliminary survey for a 300 foot ship canal at the St. Clair Flats, which will cost a few millions more. So that there are now before Congress propositions for improvements in the upper lakes and connecting rivers aggregating \$20,000,000. This is but a small sum compared to the commercial interests involved.

THE Lake Carriers' Association has arranged to take the members of the Rivers and Harbors Committee of the House of Representatives on a trip up the lakes in August. The party, which will number about 50, will assemble at Buffalo on the morning of August 7. An effort will be made to induce the Secretary of the Treasury to place one of the United States revenue cutters at the disposal of the party while inspecting the Lake Erie harbors and the lower Detroit river. August 7 will be spent at Buffalo and Erie; August 8 at Conneaut and Ashtabula, reaching Cleveland, in the evening; August 9 at Cleveland, Lorain and Sandusky; August 10 at Toledo and the lower Detroit river, reaching Detroit in the evening. The party will spend the morning of August 11 at Detroit, leaving on one of the Northern Steamship Co.'s large passenger steamers at 3 p. m., arriving at Mackinac Island on the morning of August 12. After a short stop at the island and a day run up the St. Mary's river, the party will spend about three hours at Sault Ste. Marie. Leaving the Sault on the evening of the 12th, they will reach Hancock (the copper country), via the Portage canals, on the morning of the 13th, and after a short stop there will proceed to Duluth, reaching Duluth about midnight August 13. At Duluth the party will be entertained by the iron ore interests, who will take them on a trip, lasting a couple of days, to some of the principal iron mines on the Mesabi and Vermilion ranges. They will take the next boat of the Northern Steamship Co. from Duluth back to Mackinac, where they will transfer to the steamer Manitou for Milwaukee and Chicago. At Chicago the party will disband. Besides the entertainment by the iron ore interests at Duluth, arrangements will be made by which boards of trade and chambers of commerce at the principal ports visited will provide for the entertainment of the party.

**DEEP WATERWAY TO THE COAST.**

About June 30 the final report of the deep waterways commission will be sent to Secretary of War Root. The report will embody the information concerning the cost and practicability of establishing a deep waterway from the head of the Great Lakes to the seaboard. Three routes from the lower lakes to the Atlantic have been found suitable by the commissioners, and their report will give the cost of each, the advantages of each, and the ultimate economical advantages possessed by each. The one that will prove most profitable to navigation in the long run will be recommended.

The report will be the conclusions drawn from the three years' work of the commission. Some 10 or 12 days later the data and mathematical work leading up to the summary will follow. The technical appendix will include about 2,000 pages.

In the consideration of the cost of a 21-foot channel and also of a 30-foot channel, both of which were requested as part of the commission's work, a very radical, and to lake marine men very interesting, initiative will be taken. It will be strongly recommended that a fixed depth be established for the vessel channels of the lakes, and it will be advised that beyond this depth it will not be economical to go.

Mr. Wisner reports: "In view of the consideration of various depths of channels we shall show that beyond a certain depth of water it will be a loss of money to dig deeper. Owing to the incomplete report it would not do to state what that limiting depth will be, but the continual growth of boats ever crowding upon the bottom and creating a call for still deeper water has got to end somewhere.

"So long as the cost of digging out the bottom is less proportionately than the money to be saved by the reduced rates incident on a greater carrying capacity occasioned by deeper water, the deep channel will be profitable, but when the interest on the cost of deepening the waterways exceeds the gain to the public through the marine interests, then it is time to stop.

"The report will advise on a final fixed depth. In time, as the smaller boats disappear, there will be found a uniform size of lake boats, and the claim of discrimination against the little fellows will be heard no more. So long as you go on deepening the channels it is evident that the boats built for the shallower depth will suffer at the hands of the larger craft."

THE Ludington vessel loaders have resumed their strike against the Schroeder Lumber Co. by refusing to load the barge Hilton. The men have consulted with the Milwaukee union and expect to compel the Schroeder Co. to employ union labor at Milwaukee.

**A POSITIVE GAUGE.**

Capt. John G. Keith, of Chicago, first vice president of the Lake Carriers' Association, in a communication to the Chicago Inter-Ocean says: In view of the great flow of water through the Chicago river and the drainage canal, I have a discovery to announce, one that is of great importance to Chicago, and which should attract the attention of the officials in Washington. It is nothing less than that the level of Lake Michigan has been lowered five inches. There are various ways of taking measurements. I adopted the old fashion sailors' way. On my return from Washington, one month ago, after the conference of the Lake Carriers' Association with the Secretary of War, I took a tug and went out into the lake basin where the government guage is located. The water was still. I cut a notch in a pile on the level with the surface of the water. The tug was then ordered back into the harbor and to the Washington street tunnel, where is also a guage. Here, too, I cut a notch in a pile on a level with the water. On Sunday evening last, when the bear trap dam had been open from the evening of the previous Friday, a party of us visited the two places where the notches had been made, and those marks were found to be five inches above the surface of the water, showing that the level of Lake Michigan has been lowered by the drainage canal to just that extent. The wind was easterly on Sunday afternoon, and, if anything, would increase the stage of water, rather than decrease it.

I respectfully submit my discovery to the consideration of the drainage board, and call the attention of Major Willard, the government engineer, especially to it.

**LAUNCH OF THE CHARLES R. VAN HISE.**

The largest steel steamer, Charles R. Van Hise, built at the head of the lakes to the order of the Bessemer Steamship Co., was successfully launched on Saturday last. The steamer was named after Professor Charles Richard Van Hise of the University of Wisconsin. He was thus honored on account of his writings of various works on the iron regions of the Lake Superior district. He has also written many works on structural geology and metamorphism. The steamer was built for the ore carrying trade of the Rockefeller firm. She will have a carrying capacity of 8,000 tons and will be used for the greater part in the ore carrying trade. She will be able to transport 250,000 bushels of wheat at a single cargo. Allowing this as her cargo it would make her capacity equal to nine trains of 46 cars each, allowing 6,000 bushels for each and 15 bushels to the acre, the boat would carry the yield of 16,000 acres planted to wheat. The keel for the steamer was laid last November and she was the 44th boat to be launched at the Superior yards. The length of the vessel is 487 feet over all with a keel of about 477 feet. The depth is 29 feet 6 inches and her width is 50 feet. With her entire carrying capacity occupied she will draw 18 feet of water. The engines are triple expansion, with cylinders 20½ inches high pressure, 43½ inches intermediate and 63 low pressure. There is a 42 inch stroke. There is a forged steel crank shaft of about eight tons in weight. Independent auxiliaries are 9x16 by 22 inches by 15 inch compound horizontal duplex feed pump; one six inch by 5¾ inch by 6 inch horizontal compound duplex bilge pump; one 8 inch by 12 inch by 6 inch by 10 inch compound horizontal duplex feed pump; one 9 inch by 4 inch by 10 inch pony feed and fire pump; one 5¼ inch by 4¾ inch by 5 inch cooler pump, all made by the Worthington people. Three Scotch type boilers are to be used, 13 feet 4 inches in diameter and 12 feet 3 inches long; each boiler is fitted with a Learmonth purifier and there are three Morrison corrugated furnaces, 42 inches in diameter; on the deck are a forecabin and steel deck house, the latter for the accommodation of the officers. There is a pilot house above this and two other deck houses for the crew and engineers.

The steamer was christened by Miss Dorothy Olcott, the little daughter of Mr. and Mrs. W. J. Olcott of Duluth. A staging had been built at the bow of the boat and there stood the little girl. Tied to the boat were some gay ribbons with a bottle of champagne attached. As the steel monster started, Miss Olcott tossed the bottle against the bow. As she did this she exclaimed, "I christen thee Charles Richard VanHise."

PROVISION is being made at the University of Michigan for a course in Naval Architecture. It is expected that instruction will begin in the subject with the opening of the University in September.



## AN IRON MINE PIONEER.

The death of Samuel P. Ely, which was announced in the Associated Press dispatches Friday morning, proved a great surprise to many of his earlier acquaintances.

Mr. Ely was a man of many fine qualities and possessed a personal magnetism that drew about him a circle of friends and admirers, which was limited only by the extent of his acquaintance. The News-Tribune, of Duluth, says: He was a practical man, straightforward, the soul of honesty and uprightness and held the confidence of all with whom he came in contact. His shrewdness in business affairs was also one of his striking characteristics and during his career in various parts of the country he made many fortunes, but like many persons who make mining a business, he had his ups and downs, and at the time of his death his share of this world's goods was not as extensive as many of his friends may have been led to believe. However, it is said that he leaves behind him a fortune of several hundred thousand dollars.

To Mr. Ely, after whom the town of Ely was named, belonged the distinction of having been instrumental in opening up the first mines on the Vermilion iron range. In the early '80s he interested Messrs. Charlemagne Tower, Sr., and Breitung in the undeveloped country to the northwest of Duluth, and together with his brother George, who died several years ago, he became the first sales agent for the output of the Minnesota Iron Co. He subsequently parted with his interests in that concern and organized the Minnesota Exploration Co., which afterwards secured the famous Chandler mine, the greatest mine in America at that time.

Before coming to Duluth Mr. Ely was heavily interested in railroad ventures in the upper peninsula and was one of the leading residents of that section for many years. His home at that time was in Marquette, where the remains of his wife now lie, and where will be the last resting place of his remains.

The discovery and developing of the Spanish-American iron mines in Santiago, Cuba, are largely due to Mr. Ely and originally he and Mr. Rockefeller owned them. Later on, however, Mr. Rockefeller bought out a controlling interest and at the time of his death Mr. Ely is said to have owned but a few shares of stock in the enterprise. His last field of operations, and one which promised to make him immensely wealthy had he lived, was in California, where, after 15 years of bitter litigation, he succeeded in acquiring title to some valuable gold properties. He was developing this enterprise when the summons of death came to him at Paris.

Mr. Ely was 75 years of age and left a family of three sons and two daughters. Philip, one of these, is a stock broker and resides in Boston. Arthur Ely, another son, resides in Whaaton, Ill., and is interested in iron lands in Canada. Prescott Ely is manager of a gold mining company in Alaska. A daughter, Mrs. Edward C. Ellis, is the wife of a woolen manufacturer of Boston. Another daughter, Grace, is married and resides in Paris and it was at her home that the demise occurred. A coincidence in Mr. Ely's death is that his wife also died while on a visit to Paris.

## FLUCTUATION OF LAKE LEVELS.

Our old friends, the lake levels, are again the cause of some concern in the minds of certain timid Chicagoans, all due to the announcement made by Mr. John G. Keith of the Lake Carriers' Association, that Lake Michigan has been lowered not less than five inches. It seems that a month ago Mr. Keith cut a notch on a pile at the surface of the water and on Sunday last, three days after the opening of the bear trap dam of the drainage canal, he noticed that the water level was five inches below the mark he had made a month before. He leaves it to be inferred that this lowering of the lake is due to the flow through the canal.

The Chicago Inter Ocean points out that Mr. Keith's statement is neither important nor conclusive and gives figures to sustain its contention. This alarm has often been raised, and on each occasion has been proved to be groundless, but Mr. Keith's standing as a member of the Lake Carriers' Association and the evident sincerity with which he states his case entitles his claim to at least momentary consideration. The question of lake levels has been threshed out repeatedly and at no time with more thoroughness than at the convention of the International Deep Waterway Association, in this city, five years ago. It is on record that the level of Lake Michigan has changed within two or three days to the extent not of five inches, but of five feet, while in one case the range of fluctuation was seven feet. In a score or more of

cases the range has varied from one to five feet, and these long before the Chicago drainage canal was anything more than a dream.

The Inter Ocean presents some interesting figures showing these lake fluctuations. It says: "In 1872 Lake Michigan reached the lowest level since 1847, and there was alarm among vesselmen. Then the level began to go up until in 1876, when it reached the highest point in twenty-five years. Then the level went down until in 1879 it was almost as low as in 1872, and those who had built larger vessels for the lake trade were in consternation, but from 1880 the water in the lake went up year by year until it reached the highest stage in forty years in 1886. Then there was a rapid decline in the level until 1892. It went up again in 1893, but down through 1894 and 1895 to the lowest point of forty years in 1896. Then there was again a gradual going up through 1897 and 1898. In 1899 there was a rise of eighteen inches in the level of Lake Michigan, and the level of Lake Superior was higher than in any previous year since 1876."

In short, Mr. Keith's experiment could probably be duplicated in any month, on any lake of the great chain, but any deductions from such slender data would be preposterous.—Cleveland Plain Dealer.

## LETTERS AT DETROIT MARINE POST OFFICE.

JUNE 20th, 1900.

To get any of these letters, addressees or their authorized agents will apply at the general delivery window or write to the postmaster at Detroit, calling for "advertised" matter, giving the date of this list and paying one cent.

Advertised matter is previously held one week awaiting delivery. It is held two weeks before it goes to the Dead Letter Office at Washington, D. C.

Ashwood Mrs. R.	Hastings J. B., Aurania.
Abrams Geo., Eureka.	Hynes Jos.
Algate S. W.	Hamilton Wm.
Beardsley D. S.	Ingle Jno. - 2., Berlin
Blair Frank, Donaldson.	Jocque Eddie, Australia.
Brown Jas. T., Manitou	Murray S. S., Roby.
Bradley J. M.	Mankard O. F., Rome.
Bueque Henry.	Martin Lyman, Colonial.
Brake Walter, Wyoming.	Moderson C. W.
Beaufait Amos.	Merrill Owen
Curtis Jack, Smith No. 2.	McLelland Gil., Yale.
Crouty O. J., E. M. Williams.	McGarry Geo., S. Marshall.
Clark T. E.	Nicholls Jos.
Cronheit Otis., Schuylkill.	Pearson Jno., V. H. Ketchum.
Corcoran M. J.	Pearsall Frank.
Currie Arch. C.	Roscoe Eugene.
Croft John W., Merrimac.	Ross Wm., Anderson.
Calder Geo.	Rose Wm.
Dibble Jas. B., Colonial.	Smith W. H., Bge. 13.
Dutton F. K., Bay City.	Shelden A. D.
Dupuis A. Y. - 3. Senator.	Schuster Geo.
Dowling Wm., Ogemaw.	Smith W. J.
Fish Mrs. Melvina.	Spurway Geo., Halloran.
Forrester John.	Strethon J. N.
Gates Wm.	Tullock Wm.
Gross John., Palmer.	Vanevery Chas.
Hansen Chas.	Vollmar Henry.
Hislop David., Falcon.	Walker Percy., Wyoming.
Hitchcock F., Gettysburg.	Walsh Dr. E. F.
Hanet Chris., Iron King.	

F. B. DICKERSON, P. M.

## MARINE PATENTS.

Recent Patents issued June 15, 1900. Reported specially for the MARINE RECORD. Complete copies of patents furnished at the rate of ten cents each.

651,319. Marine safe and life-buoy.	G. F. Abraham, Baltimore, Md.
651,327. Wave-motor.	Vincent Gifford, Los Angeles, Cal., assignor of three-fourths to A. J. Stevens, Albert Villinger and William Villinger, same place.
651,337. Ship's caisson.	F. C. Brooksbank, Riverton, N. J.
651,454. Tide-motor.	M. C. Wilkinson, Los Angeles, Cal.
651,504. Propeller mechanism.	Samuel Griffin, Bath, England.
651,631. Apparatus for raising or lowering boats.	J. H. Klencke, Bremen, Germany.
651,724. Anchor.	A. S. Peterson, Battle Lake, Minn., assignor of one-third to J. D. Johnson, St. Louis, Mo.
651,731. Turbine water wheel.	J. W. Taylor, York, Pa., assignor to the Taylor Manufacturing Co., Lynchburg, Va.
651,781. Dredging apparatus.	G. M. and G. W. Esterly, Washington, D. C.
651,783. Boat.	Georg von Seidlitz, Munich, Germany.
651,806. Paddle-wheel.	L. F. Kennedy, Nashville, Tenn.

A quantity of timber is shipped each year from Ashtabula harbor to England. The timber is mostly cut in Trumbull county. From there it is hauled to Ashtabula and Fairport, and carried to Lake Ontario, and from there shipped to England.

## NOTES.

THE Kingsford Foundry and Machine Works, Oswego, N. Y., state that their boiler plant is running with a full force of men, while the machine department is extremely busy with centrifugal pumping machinery, and vertical stationary and marine engines. Recent shipments of large pumps have been made to Japan, Mexico and the Cape Nome district, at which latter place they are used on the beach for dredging purposes.

THE Magnolia Metal Co., New York City, N. Y., have opened a branch office at San Francisco, Cal. This office is under the management and control of Messrs. Chas. C. Moore & Co., engineers, of San Francisco, who have branch houses at Los Angeles, Seattle and Honolulu, and with whom the Magnolia people have recently signed a contract giving them the sole and exclusive agency for Magnolia metal in the states of California, Oregon, Washington, Montana, Nevada, Idaho, Arizona, Utah, New Mexico and the Hawaiian Islands. Messrs. Chas. C. Moore & Co. are well known throughout that territory, and the connection will undoubtedly be a valuable one.

F. G. MOSHER, engineer of the yacht Harvard, Cambridge, Mass., writing to the Lee Injector Mfg. Co., Detroit, Mich., says: "After having had over 20 years' experience with marine engines and boilers and having used all kinds of injectors and inspirators, find after a thorough test, that your Lee ball valve automatic injector is the simplest and best working injector that I have ever used. It works perfectly satisfactorily from 40 to 265 pounds steam, feeding through two heater coils, containing 222½ feet of three-fourths inch pipe each before entering boiler proper, and I would not part with it for any money if I could not get another one just like it. I will gladly show it to any party that you may refer to me."

A SPECIAL from Philadelphia states that owing to the great demand by foreign coal dealers for American bituminous coal, Greenville, Hudson county, New Jersey, may become the greatest coal shipping point on the coast. E. J. Berwind, of the Berwind-White Coal Company, is quoted as saying that he could ship 40,000,000 tons of bituminous coal immediately to Europe if his company had the facilities for handling such an immense amount. It was at first believed that the British-Boer war was responsible in a measure for the scarcity of soft coal in Europe, but now it is the opinion that many of the mines have become exhausted. American producers were compelled to ignore innumerable requests from foreign dealers for large shipments because the demand at home was unequal to the supply. Now, it is understood, the European market is being sought, as arrangements are under way to supply both home and foreign trade.

## SUN'S AMPLITUDES.

The following approximate amplitudes of the Sun's rising will be given each week in this column during the season of navigation. A second bearing may be taken by compass at sunset, by reversing the east bearing given for the nearest latitude, as the change in declination for a few hours makes but a slight difference in the true bearing of the Sun's setting. The bearing may be taken when the Sun's center is on the horizon, rising or setting. The elements which may be obtained by taking these amplitudes are the quantities known as local attraction, variation and deviation, or the total difference between compass and true, or geographical bearings.

LAKE ERIE AND S. END LAKE MICHIGAN, LAT. 42° N.  
 Sunrise. Amplitudes. Bearing P'ts. Bearing Comp.  
 June 22.....E. 32° N. = N. 5½ E. = N. E. by E. ½ E.  
 June 29.....E. 32° N. = N. 5½ E. = N. E. by E. ½ E.

LAKE ONTARIO, S. END HURON AND CENTRAL PORTION LAKE MICHIGAN, LAT. 44° N.  
 Sunrise. Amplitudes. Bearing P'ts. Bearing Comp.  
 June 22.....E. 33° N. = N. 5 E. = N. E. by E.  
 June 29.....E. 31° N. = N. 5½ E. = N. E. by E. ½ E.

N. END LAKES HURON AND MICHIGAN, LAT. 46° N.  
 Sunrise. Amplitudes. Bearing P'ts. Bearing Comp.  
 June 22.....E. 35° N. = N. 4½ E. = N. E. ¾ E.  
 June 26.....E. 33° N. = N. 5 E. = N. E. by E.

LAKE SUPERIOR, LAT. 48° N.  
 Sunrise. Amplitudes. Bearing P'ts. Bearing Comp.  
 June 22.....E. 36° N. = N. 4¾ E. = N. E. ¾ E.  
 June 27.....E. 35° N. = N. 4½ E. = N. E. ¾ E.

With a compass correct magnetic, the difference between the observed and true bearing or amplitude will be the variation for the locality. Should there be any deviation on the course the vessel is heading at the time of taking the bearing, the difference between the observed and the true amplitude after the variation is applied will be the amount of deviation on that course. If the correct magnetic bearing is to the right of the compass bearing, the deviation is easterly, if to the left, the deviation is westerly.



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### LATITUDE AND TIME BY DOUBLE ALTITUDES OF THE SUN MOON OR ANY PLANET.

[Communicated.]

In the MARINE RECORD of April 19 last, a general solution of the problem of finding the exact latitude by the altitudes of two heavenly bodies has been given, which includes the problem of finding latitude by double altitudes of a single body, as, for instance, the sun, moon, or any planet, when the time between observations is known. For any single object, however, a special formula may be developed for the hour angles, interesting to navigators in many respects.

From the fundamental equations expressing the relations between hour angles, altitudes, latitude and declinations, is obtained after certain transformations:

$$\sin. m = \frac{\cos. H \sin. h}{\cos. b \cos. c \cos. d \sin. e} - \tan. d \left\{ \frac{\tan. b - \tan. c \cos. m}{\sin. e + \tan. e} \right\}$$

in which  $m$  denotes half the sum, or difference of the hour angles (generally called middle time)  $H$  half the sum of the altitudes,  $h$  half their difference,  $b$  the assumed latitude,  $c$  half the sum of the declinations,  $d$  half their difference,  $e$  half the difference or sum of the hour angles (generally called half elapsed time).

As the change in the declination of any heavenly body is not exceeding 18 minutes per hour, and as the elapsed time between observations will not exceed 10 hours, the total change will be less than 180 minutes or 3 degrees, half of which  $1^\circ 30'$  is the greatest value of  $d$ ; therefore  $\cos. d$  in the denominator of the first summand of the preceding formula will always nearly equal unity and may be neglected.

Putting the first summand equal  $\sin. n$

$$\sin. m - \sin. n = -\tan. d \left\{ \frac{\tan. b - \tan. c \cos. m}{\sin. e + \tan. e} \right\}$$

but as  $\sin. m - \sin. n = 2 \cos. \frac{1}{2} (m+n) \sin. \frac{1}{2} (m-n)$  and as  $\frac{1}{2} (m+n) = m$  nearly, and  $2 \sin. \frac{1}{2} (m-n) = \sin. (m-n)$ , because  $(m-n)$  is very small,

$$\sin. (m-n) = -\tan. d \left\{ \frac{\tan. b - \tan. c}{\sin. e \cos. m + \tan. e} \right\}$$

$$\text{or } m-n = -d \left\{ \frac{\tan. b - \tan. c}{\sin. e \cos. m + \tan. e} \right\}$$

Hence  $(m-n) \div n = m$ .

The expression  $\sin. n = \frac{\cos. H \sin. h}{\cos. b \cos. c \sin. e}$  represents

the first part of Douves' method to find the latitude by double altitudes of the sun, a method widely known among navigators; and the formula for  $m-n$  represents the error in the hour angles by Douves' method. As this error is easily ascertained by the above formula, Douves' method will be much improved by applying it; and as the exact latitude is easily found from two approximate values of it by the method explained in the above mentioned issue of the RECORD, the so improved Douves' method will furnish a con-

venient means for finding the exact latitude and time at sea.

The expression for  $m-n$  is of further interest as it represents the general formula of the correction of half the sum or difference of any two hour angles for any change in the declination, and from it may be derived the "equation of equal altitudes" by merely putting  $m$  equal zero, that is,  $\cos. m = 1$ , and reversing the sign of the correction.

This property of the correction renders it easy of application in all cases, because by following the same rules which obtain for equal altitudes, and finally reversing the sign, errors will be avoided.

As the elapsed time between observations represents the sum or difference of the hour angles of the sun only, it has to be converted into moon time, planet time, or star time, as the case may be, by the following rule:

Sum or difference of hour angles  $2e$  equals elapsed time plus change of the mean sun's right ascension during the interval between observations, minus change of the right ascensions of the object during the interval between observations. The change in the R. A. of an object is generally positive and therefore has to be subtracted, except with planets in retrogression, when it has to be added. The change in the mean sun's R. A. is always positive and equals 9 857 time seconds per hour.

The following example illustrates the reckoning.

Example: May 4th, in  $52^\circ 33' N.$  Lat. and  $34^\circ 16' W.$  Long., by D. R. altitudes of the moon were taken from which the following true altitudes were obtained. Time noted by a chronometer which was slow 0h. 33m. 24s. on Greenwich mean time. In the interval between observations course made good N. E. true 21.4 miles per hour; bearing of first altitude S.  $21^\circ 9' W.$  true; find the latitude and longitude at the second observation.

Chronometer.			True altitude.		
h	m	s	°	'	"
11	14	28	50	21	23 W.
2	39	37	27	49	16 W.

interval 3 25 9  
= 3.42

Dist. run during interval  $3.42 \times 21.4 = 73.18$  miles; course N.  $45^\circ E.$  true gives

diff. lat.  $51.7 N.$ ; dep.  $51.7 E.$

Lat. by D. R.  $52^\circ 33.0 N.$

At second observation Lat. in  $53^\circ 24.7 N.$

Supplement angle of course and bearing  $23^\circ 51'$  with  $73.18$  dist. gives correction of first altitude

$$-66.96' = \dots \dots \dots -1^\circ 6' 58''$$

1st alt.  $50^\circ 21' 23''$

1st alt. corrected  $49^\circ 14' 25''$

Greenwich Time:				hr.			
Chronometer				d.	hr.	m.	s.
slow +				4	11	14	28
1st Greenwich Mean Time				4	11	47	52
Interval					3	25	9
2d Greenwich Mean Time				4	15	13	1

For the first and second Greenwich M. T. are found for the moon from the Nautical Almanac respectively:

R.	A.	h.	m.	s.	Decl.	°	'	"
11	21	53.40			15	20	0	N
11	28	25.42			16	20	0	

Diff. 6 32.02 1 0 0

Correction of Interval:

	hr.	m.	s.
Diff. of Mean Sun's R. A. $3.42 \times 9.857 = +$	0	0	33.71
Diff. of Moon's R. A. as above	0	6	32.02
Observed interval	3	25	9.00

(Sum or) difference of hour angles 3 19 10.69  
In arc  $48^\circ 47' 40.35''$

These preliminaries being settled the reckoning proper begins with the following data:

Sum of alt. =  $76^\circ 54' 41''$ ; half sum =  $38^\circ 27' 21'' = H$   
Diff. of alt. =  $21^\circ 34' 9''$ ; half diff. =  $10^\circ 47' 5'' = h$   
Sum of decl. =  $31^\circ 40' 0''$ ; half sum =  $15^\circ 50' 0'' = c$   
Diff. of decl. =  $1^\circ 0' 0''$ ; half diff. =  $0^\circ 30' 0'' = d$   
(Sum or) diff. of hour angles  $49^\circ 47' 40''$ ; half =  $24^\circ 53' 50'' = e$   
Assumed latitude  $53^\circ 25' 0'' = b$

To find middle time:

°	'	"	
38	27	21	cos 9.893811
10	47	5	sin 9.272119
24	53	50	cosec 0.375726
			9.541656

15	50	0	sec 0.016798
53	25	0	sec 0.224760

Apr. Middle Time  $37^\circ 22' 32''$  sin 9.783214

Correction of Middle Time:

53° 25' 0" tan	0.129471	15° 50' 0" tan	0.452706
24 53 50 cosec	0.3757-6		cot 0.333364
37 22, 32 sec	0.099812	+ 0.6110 =	9.786070
	0.605009 =	- 4.0273	
		- 3.4163	

Cor. =  $3.4163 \times 30 = 102.49' = 1^\circ 42' 29''$

Apr. Middle Time  $37^\circ 22' 32''$

Corrected Middle Time 39 5 1

Half Elapsed Time 24 53 50

Hour angle of greater alt. 14 11 11

Half hour angle  $7^\circ 5' 36''$  sin. 9.091617 (2)

8.183234

log 2 0.301030

8.484264

subtract the above 0.241558

8.242706 = 0.017486

$49^\circ 14' 25''$  n sin. 0.757454

M Z D  $39^\circ 12' 2''$  n cos. 0.774940

Decl. 15 20 0 N

By 1st approx. lat. 54 32 2 N

Repetition.

Constants Previously 9 541656

" " 0.016798

$54^\circ 32' 2''$  sec. 0.236406

Approx. middle time  $38^\circ 34' 29''$  sin. 0.253204

Correction of Middle Time:

$54^\circ 32' 2''$  tan. c. 1.47276

Previously 0.375726

$38^\circ 34' 29''$  sec. 0.106907

0.629909 = - 4.265

Previously + 0.611

- 3 654



Cor. =  $3.654 \times 30 = 109.62' = 1^{\circ} 49' 37''$   
Approx. middle time  $38^{\circ} 34' 29''$   
Corrected middle time  $40^{\circ} 24' 6''$   
Half elapsed time  $24^{\circ} 53' 50''$   
Hour angle of greater alt.  $15^{\circ} 30' 16''$   
Half hourangle  $7^{\circ} 45' 8''$  sin.  $9.129978$   
 $8.259956^{(2)}$   
log 2  $0.301030$   
 $8.560986$   
subtract the above  $0.253204$   
 $8.307782 = 0.020313$   
Previously  $0.757454$   
M. Z. D.  $38^{\circ} 56' 37''$  N. cos.  $0.777767$   
Decl.  $15^{\circ} 20' 0''$  N.  
By 2d approx. lat.  $54^{\circ} 16' 37''$  N.  
1st diff. =  $54^{\circ} 32' 2'' - 53^{\circ} 25' 0'' = 1^{\circ} 7' 2''$   
2d diff. =  $54^{\circ} 16' 37'' - 54^{\circ} 32' 2'' = -0^{\circ} 15' 25''$   
Correction of assumed lat. =  $\frac{67.03^2}{67.03 + 15.42} = 54.49$   
Assumed lat.  $53^{\circ} 25.00'$  N.  
At the 2d observation exact lat.  $54^{\circ} 19.49'$  N.

With the exact latitude known, the exact ship's time may be found in the usual way, from the lesser altitude, or by amending the previous reckoning for finding the hour angles as follows:

Previously  $9.541656$   
Previously  $0.016798$   
 $54^{\circ} 19' 29''$  sec.  $0.234189$   $0.250987$   
Approx. middle time  $38^{\circ} 20' 32''$  sin.  $9.792643$   
 $54^{\circ} 19' 29''$  tan.  $0.143925$   
Prev.  $0.375726$   
 $38^{\circ} 2' 32''$  sec.  $0.105507$   
 $0.625158 = -4.218$   
Prev.  $+0.611$   
 $-3.607$   
Cor. =  $3.607 \times 30 = 108.21' = 1^{\circ} 48' 13''$   
Appr. middle time =  $38^{\circ} 20' 32''$   
Exact middle time  $40^{\circ} 8' 45''$   
Half elapsed time  $24^{\circ} 53' 50''$   
Hour angle of lesser altitude  $65^{\circ} 2' 35''$   
=  $4^h. 20^m. 10^s.$   
Moon's R. A.  $11^h. 28^m. 25^s.$   
Merid. R. A.  $15^h. 48^m. 35^s.$   
Mean Sun's R. A. noon  $4^h. 24^m. 58^s.35.$   
Acceleration for  $15^h. 13^m. 2' 30.0''$   $2^d. 49' 28''$   
Mean time at ship  $12^h. 59^m. 7^s.$   
Mean time at Greenwich  $15^h. 13^m. 1^s.$   
Long. in time  $2^h. 13^m. 54^s. W$   
Long. in arc  $33^{\circ} 28.5' W$

The repetition of the reckoning is easily made, as few logarithms have to be changed; and a repetition for the correction of middle time is necessary only for the moon and in high latitudes. The small error caused by using the approximate middle time for the correct one in computing the correction is of no account. In all cases the latitude will be up to the minute correct and the time within 10 seconds. As special tables have been computed for half the elapsed time, middle time, and rising, (see Norie etc.) the reckoning is still more simplified by using them.

This improved Douve's method has the great advantage of not being confined to narrow limits in order to give correct results, as is the case with Sumner's method, requiring a pretty accurate pre-knowledge of the true latitude in,

without which results can not be depended upon, especially in higher latitudes.

Similarly the English method of five arcs, admits of no comparison with the improved Douves' method, because it is powerless to handle problems like the preceding one. Sumner's method and the method of five arcs have been considered by many the very essence of nautical knowledge, although in practice depending upon one another, the one for a basis to work on, the other for covering its defects when the declination changes. This mutuality has made them prominent so long as no better methods were in existence; both have been more or less of a success as chance dictated; being applied to the sun only.

The improved Douve's method is not dependent upon any other, and applicable to any single heavenly body. In its particular line it has no equal as to exactness, excepting the general method for finding latitude, explained in the RECORD of April 19 last.

JOHN MAURICE,  
Civil Engineer and Nautical Expert.

Chicago, June, 1900.

LITERARY AND BOOK NOTICES.

Few subjects present more material for dramatic narrative than the story of "The Slave Trade in America." The men engaged in it were adventurers, and an account of their voyages, methods, and brutalities reads like some story of piratical seas. John R. Spears, whose first article on the subject appears in the July Scribner's, has made a thorough investigation of the documents in the case, and his articles are based on facts.

In "The Shellback," published by Brentano, Alexander J. Boyd tells his experience as a boy in the Yankee merchant marine of the early '60s. The story is edited by Archie Campbell, and in an introduction Morgan Robertson deplores the unnecessary hardships of life and brutality of treatment pictured in the story, conditions of which he himself also had personal experience. "It is a pity that this book is not written up to date," he adds, "that it cannot tell of the hellship of to-day, as it does of the hellship of the 60's; for since that time matters have not improved. \* \* \* The life of the merchantman in the 60's is shown to have been hard with a treatment brutal in many ways, but it is described in this story with the light spirit of a boy who resents ill-treatment at the time, but takes hardship as rather a matter of course.

Stevens' Mechanical Catechism, just issued, is a marvel. Like all the reference books published by Laird & Lee, it is full of information, not an inch of space being wasted. All the subjects are treated in the most interesting and thorough manner and in plain, lucid language. Mechanics and engineers will be pleased with the work. Other books may contain the same information, but Stevens' talks the mechanics' language and evidently knows their thoughts, their difficulties and their needs. Intricate problems and purely theoretical questions are entirely omitted. A large part of the subjects are treated in the form of questions and answers, as preparation for Civil Service examinations. The steam engine is explained with all its modern attachments and improvements, slide valves, safety valves, injectors, pumps, steam gauges, lubricators, eccentrics, link motion, indicator etc. Silk cloth, \$1.00. Leather, library style, marbled edges, \$1.50. Laird & Lee, Chicago.

Isaac Stephenson is now sole owner of the steamer I. Watson Stephenson. The purchase of outside interests cost him \$45,000.

VISIBLE SUPPLY OF GRAIN.  
As compiled for THE MARINE RECORD, by George F. Stone, Secretary Chicago Board of Trade.

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE. Bushels.	BARLEY Bushels.
Buffalo.....	974,000	326,000	296,000	135,000	364,000
Chicago.....	10,100,000	3,505,000	1,295,000	372,000	.....
Detroit.....	141,000	40,000	4,000	5,000	1,000
Duluth.....	11,977,000	688,000	393,000	42,000	34,000
Fort William, Ont.....	1,670,000	.....	.....	.....	.....
Milwaukee.....	281,000	.....	1,000	1,000	4,000
Port Arthur, Ont.....	76,000	.....	.....	.....	.....
Toledo.....	192,000	314,000	240,000	2,000	.....
Toronto.....	33,000	.....	11,000	.....	19,000
On Canals.....	365,000	464,000	104,000	82,000	21,000
On Lakes.....	356,000	2,237,000	350,000	51,000	98,000
On Miss. River.....	.....	.....	.....	.....	.....
Grand Total.....	44,176,000	11,230,000	5,891,000	923,000	770,000
Corresponding Date, 1899.....	27,923,000	12,601,000	7,251,000	819,000	1,359,000
Increase.....	.....	2,000	.....	24,000	9,000
Decrease.....	231,000	.....	244,000	.....	.....

While the stock of grain at lake ports only is here given, the total shows the figures for the entire country except the Pacific Slope.

"There is nothing more uncertain than a horse race," exclaimed the man with a tendency to talk loud. And the melancholy friend responded, "You never worked in a weather bureau did you?"

PROPOSALS.

TREASURY DEPARTMENT, Office of General Superintendent U. S. Life-Saving Service, Washington, D. C., June 18, 1900. Sealed proposals will be received at this office until 2 o'clock p. m. of Thursday, the 12th day of July, 1900, and then publicly opened for furnishing supplies required for use of the Life-Saving Service for the fiscal year ending June 30, 1901; the supplies to be delivered at such points in New York City, Grand Haven, Mich., and San Francisco, Cal., as may be required, and in the quantities named in the specifications. The supplies needed consist of beds and bedding, blocks and sheaves, cordage, crockery, furniture, hardware, lamps, lanterns, etc.; lumber, medicines, etc.; paints, oils, etc.; ship chandlery, stoves, etc.; tools, and miscellaneous articles; all of which are enumerated in the specifications attached to the form of bid, etc., which may be obtained upon application to this office, or to the Inspector of Life-Saving Stations, 17 State street, New York City; Superintendent Eleventh Life-Saving District, Grand Haven, Mich.; and Superintendent Twelfth Life Saving District, New Appraisers' stores, San Francisco, Cal. Envelopes containing proposals should be addressed to the "General Superintendent U. S. Life-Saving Service, Washington, D. C.," and marked on the outside "Proposal for Annual Supplies." The right is reserved to reject any or all bids, and to waive defects, if deemed for the interests of the government.

HORACE L. PIPER,  
25-26 Acting General Superintendent.

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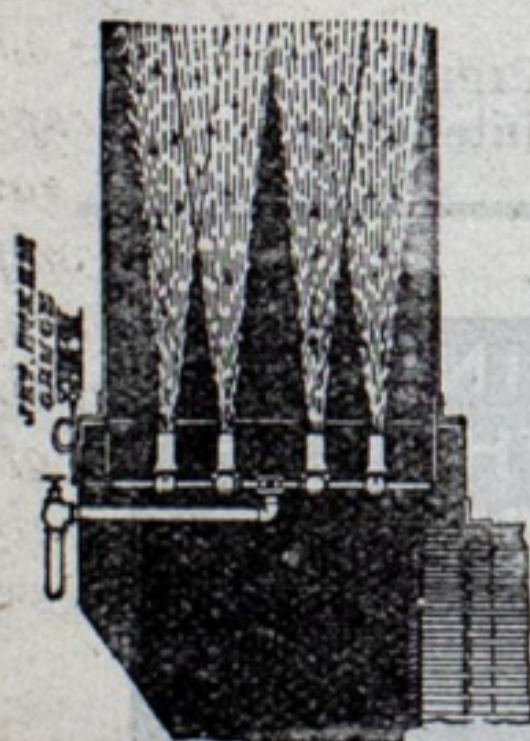
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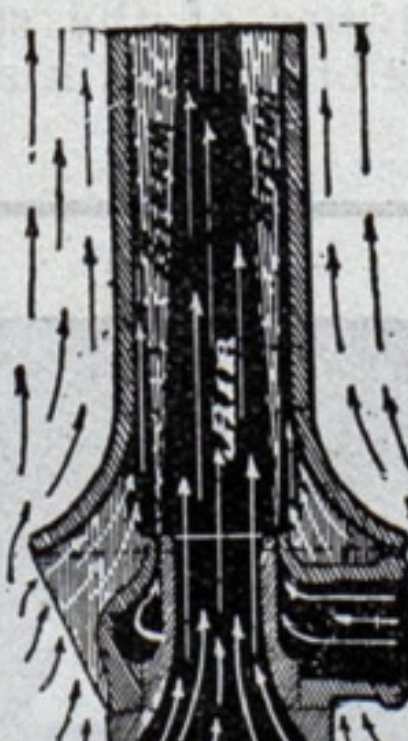
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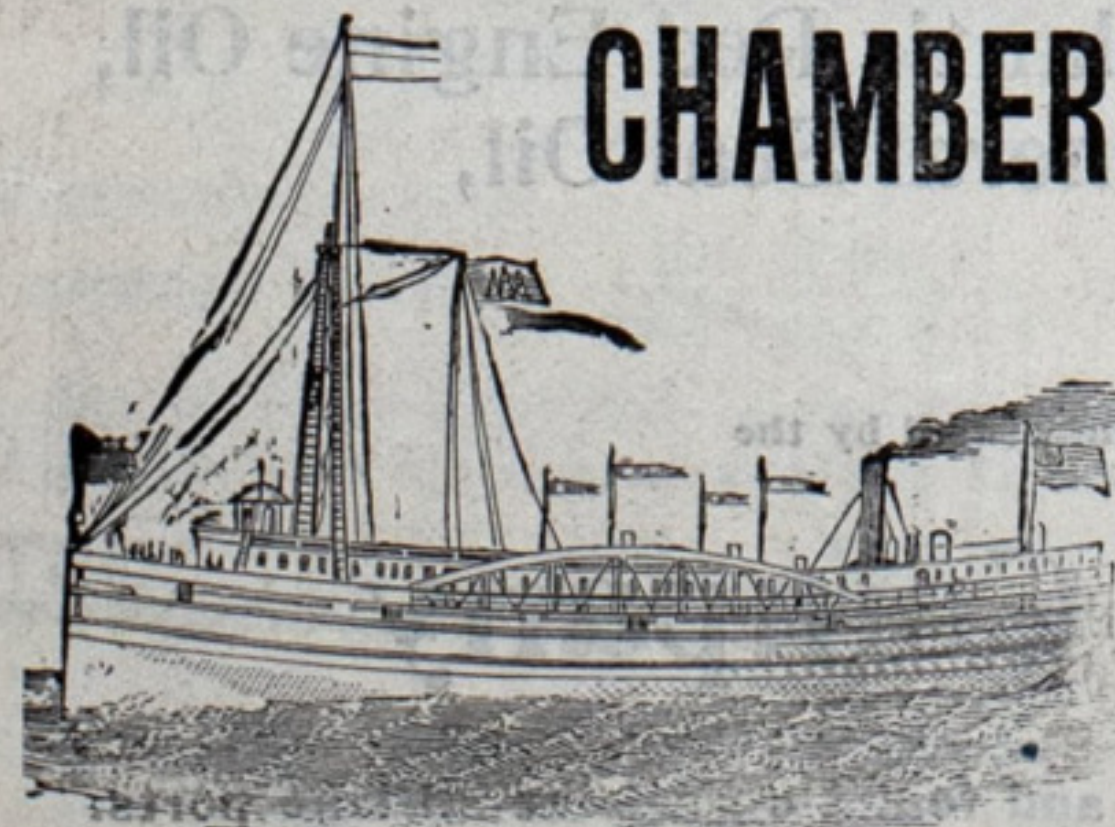
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## Government Proposals.

U. S. ENGINEER OFFICE, Buffalo, N. Y., June 20, 1900. Sealed proposals for construction of concrete superstructure on south pier at Buffalo, N. Y., will be received here until 11 a. m., July 10, 1900, and then publicly opened. Information furnished on application. T. W. SYMONS, Major, Engrs. 25-27

U. S. ENGINEER OFFICE, Galveston, Tex., May 30, 1900. Sealed bids in triplicate for improving Galveston Ship Channel and Buffalo Bayou, Tex., by dredging, etc., will be received until 2 p. m., June 30, 1900, and then publicly opened. For information apply to C. S. RICKE, Capt., Engrs. 22-25

PROPOSALS will be received at the office of the Light-House Engineer, San Francisco, Cal., until noon on July 5, 1900, for the construction and delivery f. o. b. in San Francisco, of the metal work of a fourth-order lantern, for Point Arguello Light-Station, Cal. Specifications, drawings and full information relative to the work can be obtained on application to this office. CHAS. E. L. B. DAVIS, Major, Corps of Engineers, U. S. A., Engineer 12th Light House District. 23-25

U. S. ENGINEER OFFICE, Vicksburg, Miss., May 28, 1900. Sealed proposals for excavating 7,500,000 cubic yards of earth, more or less, along route for diverting mouth of Yazoo River, near Vicksburg, Miss., will be received here until 3 o'clock, p. m., June 28, 1900, and then publicly opened. Information furnished on application. THOS. L. CASEY, Maj., Engrs. 22-25

SEALED PROPOSALS will be received at the office of the Light-House Board until 2 o'clock p. m., June 25, 1900, and then opened, for furnishing the material and labor of all kinds necessary for the construction and delivery of the twin-screw steel steam light-house tender Sumac, for a fixed sum for said vessel, delivered either in the harbor of Chicago, Ill., or at the Light-House Depot at St. Joseph, Mich., as will be determined by the Light-House Board. Forms of proposals, plans and specifications may be had upon application to the Light-House Board, or at the office of the Light-House Inspector, Chicago, Ill. F. J. HIGGINSON, Rear Admiral, U. S. N.

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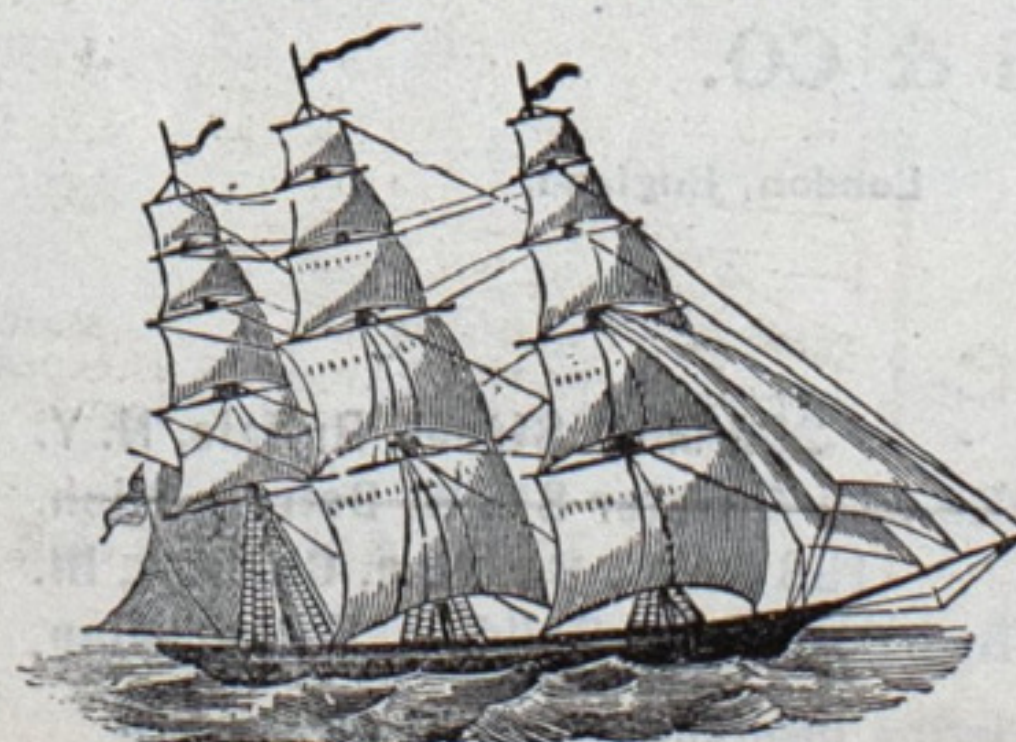
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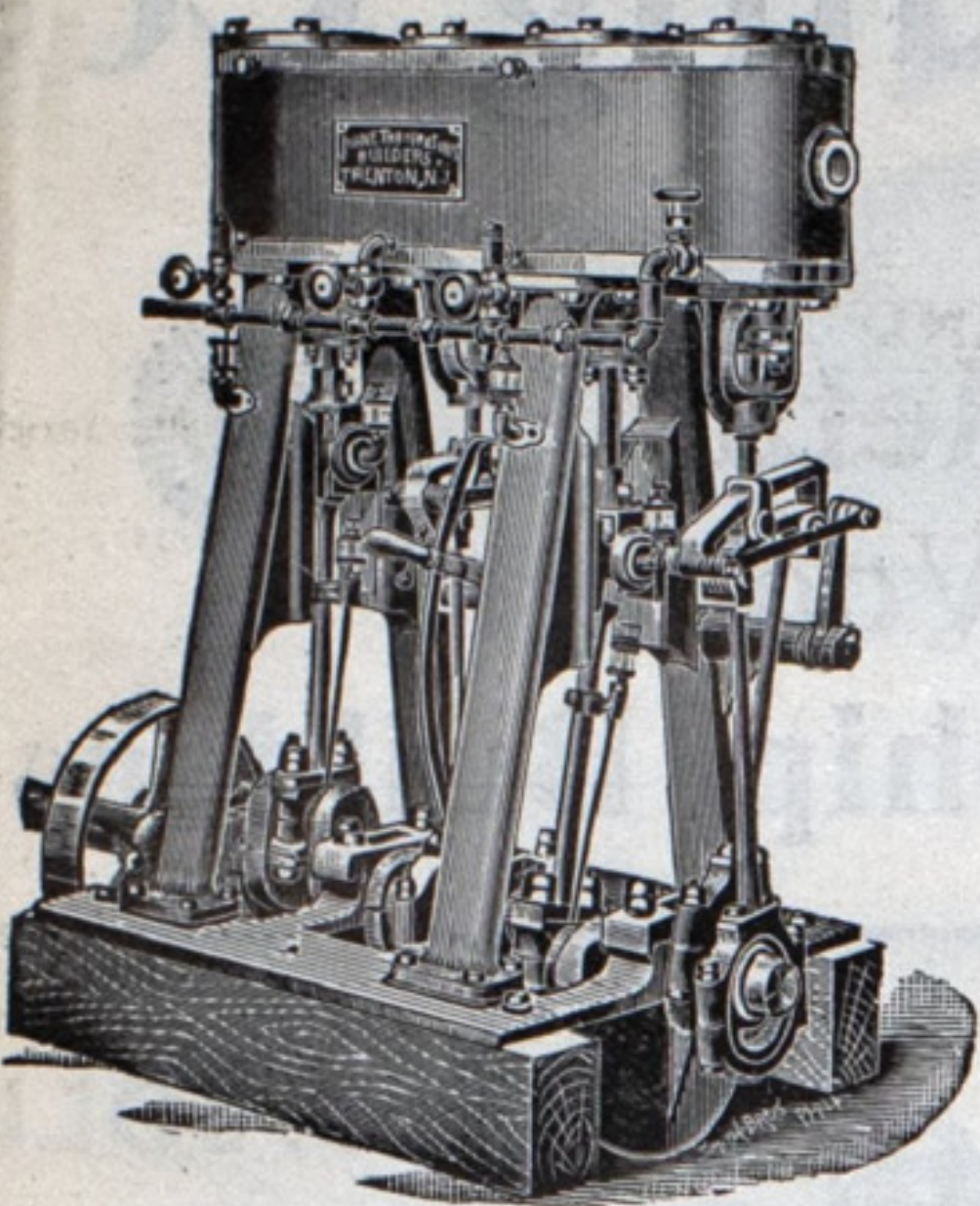
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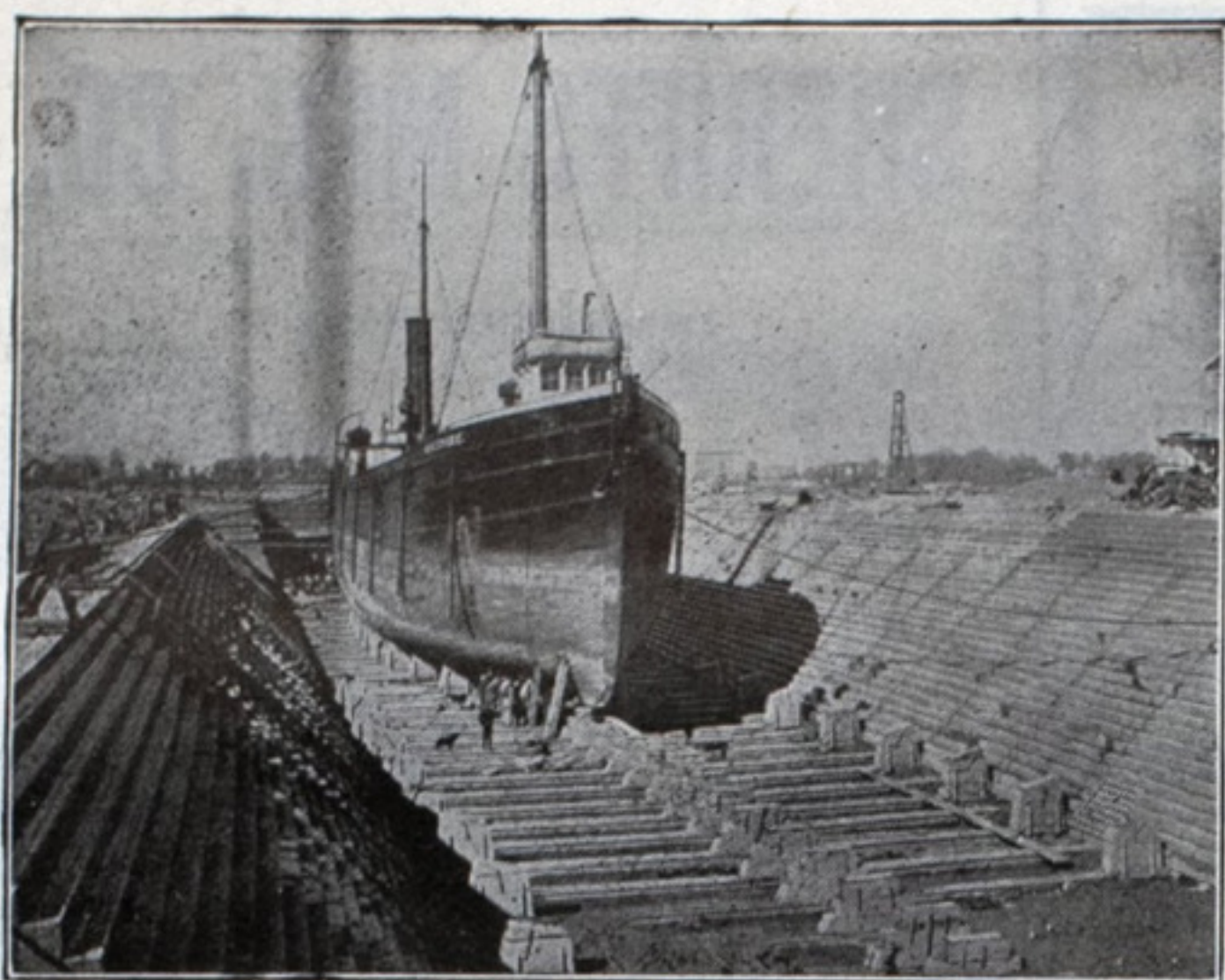
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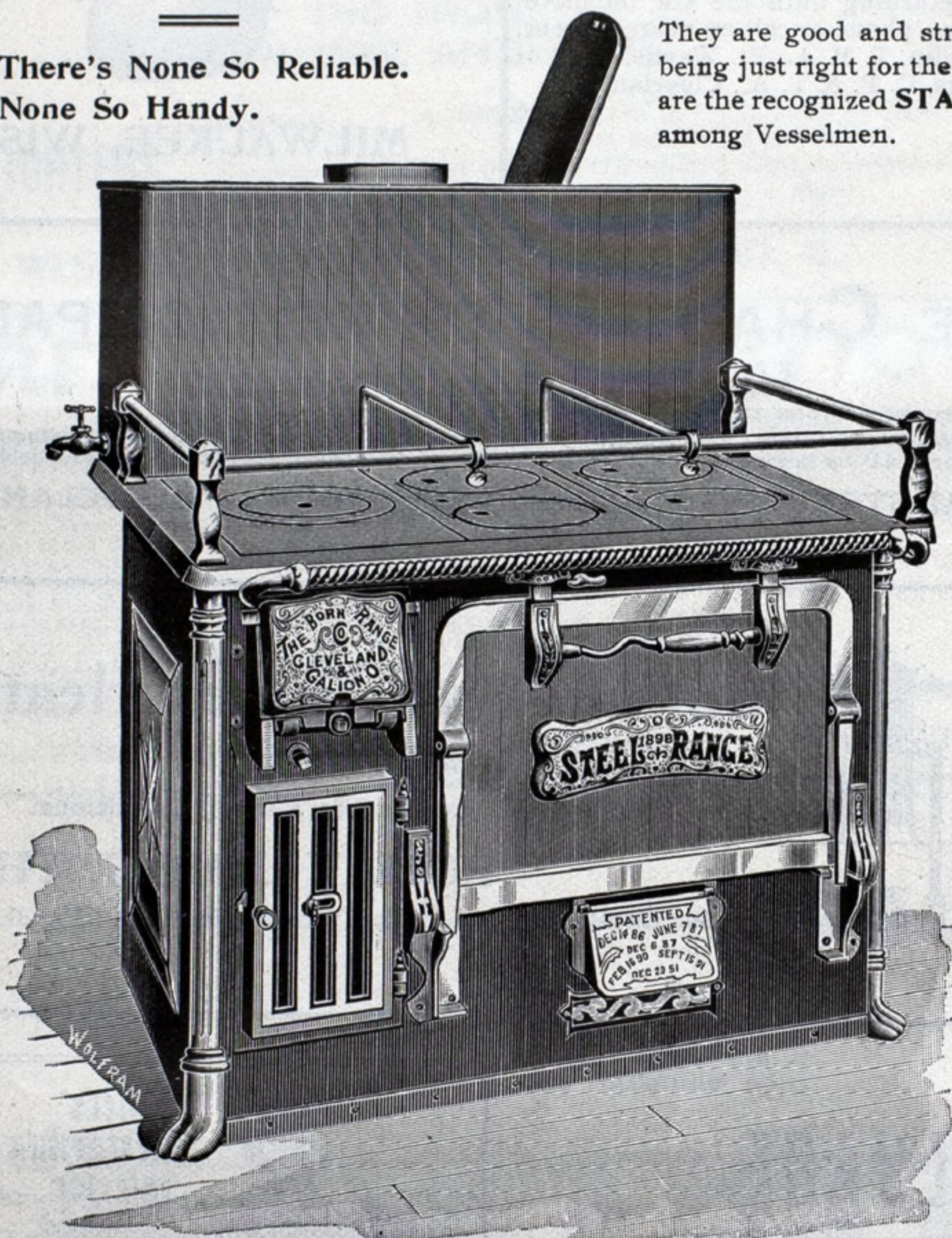
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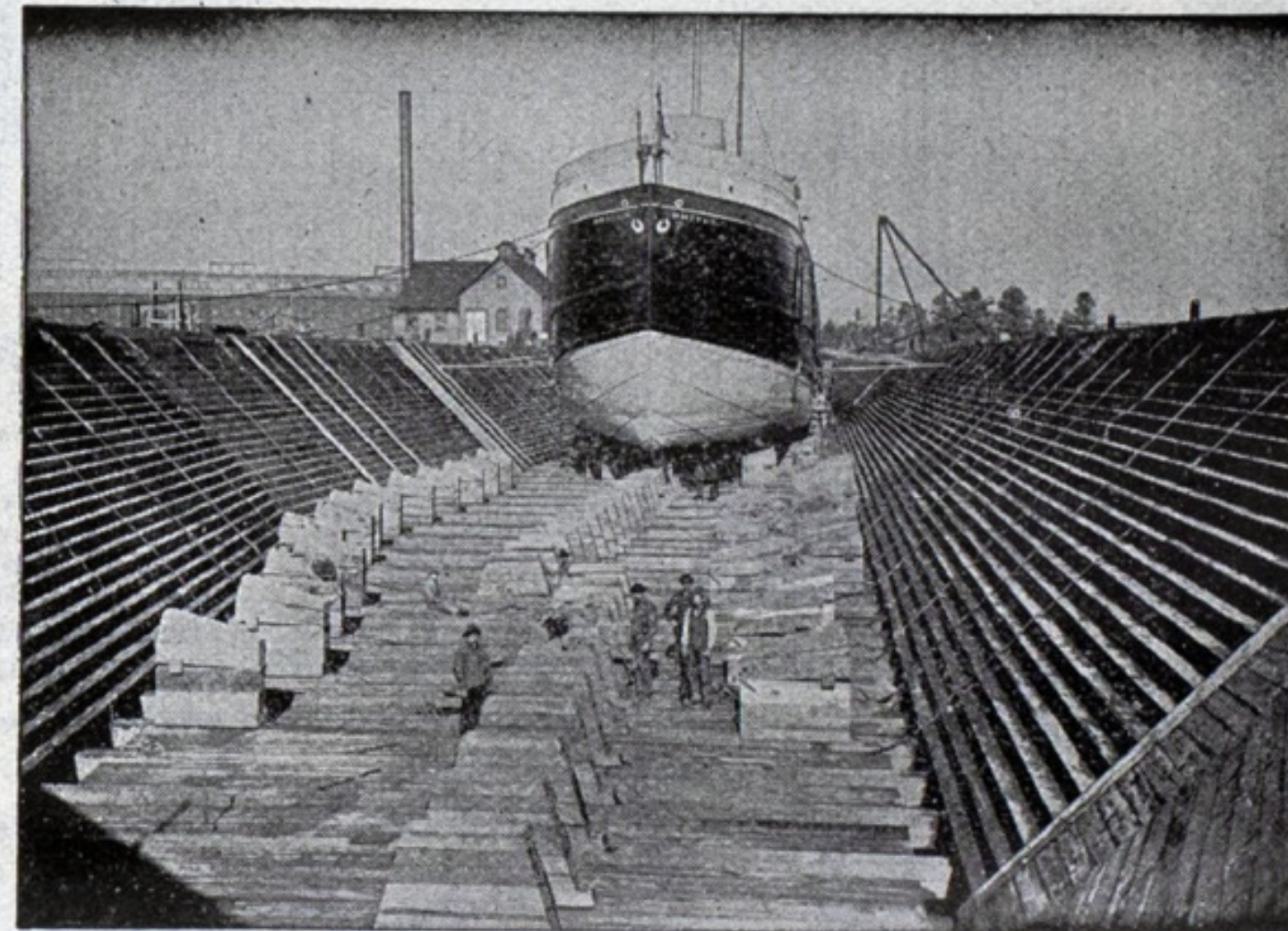
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